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COEFFICIENTS FOR CALCULATING
RADIATION IMPEDANCES AND FAR-FIELD
PRESSURES OF FREE-FLOODED RING
TRANSDUCERS

Peter H. Rogers, et al

Naval Research Laboratory
Washington, D. C.

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Tables of coefficients for determining the radiation impedance and far-field pressure of a free-flooded vibrating ring in an arbitrary medium at 45 frequencies for each of 36 ring geometries were produced. The only restriction on the known velocity distribution for using the tables is that the inside, top and bottom, and outside normal surface velocities must be uniform. Simple formulas for determining the normal surface velocity distribution for some special cases and formulas for determining the radiation resistance and far-field pressure in the low-frequency limit were developed.			

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COEFFICIENTS FOR CALCULATING RADIATION IMPEDANCES AND FAR-FIELD PRESSURES OF FREE-FLOODED RING TRANSDUCERS

INTRODUCTION

The free-field radiation characteristics of a vibrating free-flooded ring (right rectangular toroid) are completely determined by the frequency of oscillation, the ring geometry, the normal velocity of the surface of the ring, and the density and sound speed of the acoustic medium. The parameters of the medium are easily factored out of the expressions characterizing the radiation from free-flood rings. Hence, radiation from ring transducers can be characterized by the relative dimensions and acoustic size of the ring independent of the parameters of the medium. The normal velocity distribution on the surface of a ring transducer, however, is a function not only of the ring geometry and frequency of oscillation but also of the ring material parameters, the type of drive, and the acoustic load. It is obviously not possible to include all these parameters in a table of radiation characteristics for free-flooded rings. Therefore, as a compromise, we will present numerical data corresponding to each surface having a unit outward velocity, with the remaining surfaces fixed in space. Formulas will be presented for combining the data to obtain numerical values corresponding to actual physical situations.

The data presented in the tables in Appendix A were generated with the latest version of the NRL SHIP program [1], a fast computer algorithm for determining the radiation characteristics of free-flooded ring transducers whose normal axisymmetric velocity distribution is known. A listing of the program is given in Appendix B.

Two tables are presented for each of the 36 ring geometries considered. The first table for each geometry contains impedance coefficients, and the second table contains pressure coefficients. The coefficients in these tables are unitless complex numbers. The surface velocity distribution, the frequency of oscillation, an absolute dimension of the ring, and the density and sound speed of the medium must be known before these coefficients can be converted into absolute numbers. In the case of the far-field pressure, the distance at which the pressure is to be determined must also be known. The numbers in the tables are believed to be accurate within 1%, except for those that determine the real part of the radiation impedance for very thin geometries at low frequencies. However, at very low frequencies the radiation resistance (and the far-field pressure) can be determined from simple formulas.

DESCRIPTION AND USE OF TABLES

Figure 1 shows the ring geometry nomenclature used in developing the tables. T and H are defined by the identities

Note: Manuscript submitted March 27, 1974.

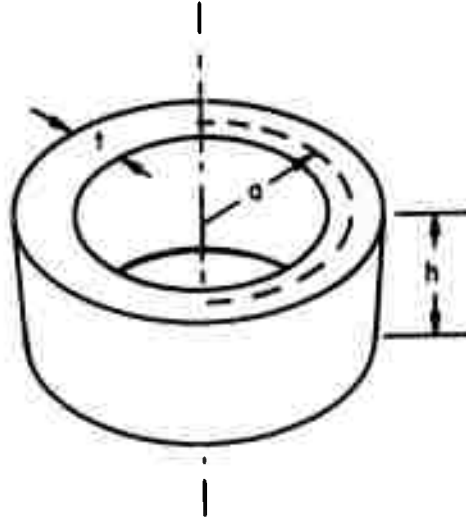


Fig. 1—Ring geometry nomenclature

$$T \equiv \frac{t}{a} \quad (1)$$

and

$$H \equiv \frac{h}{a}, \quad (2)$$

where t = thickness, a = mean radius, and h = ring height. Each table presents impedance and pressure coefficients for a specific value of T and H as a function of ka where k , the wave number, is defined by

$$k = \frac{2\pi f}{c} \quad (3)$$

f being the frequency of oscillation and c the velocity of sound. The 36 geometries considered correspond to all possible combinations of $T = 0.05, 0.1, 0.2, 0.3$, and 0.5 and $H = 0.1, 0.2, 0.5, 1.0, 2.0, 3.0$, and 5.0 as well as the special case $T = 2/9$ and $H = 4/9$. For each geometry, $ka = 0.01, 0.05, 0.10, 0.15, 0.20, 0.30, 0.40, 0.50, \dots, 3.70, 3.80, 3.90, 4.00, 4.50$, and 5.00 .

The subscripts 1, 2, and 3 refer to the inside, top and bottom, and outside surfaces, respectively. The positive normal direction is defined to be outward from the ring material. An impedance Z_{ij} can be defined as

$$Z_{ij} = \frac{p_j A_j}{V_i \rho c A} \quad (4)$$

where p_j is the average rms pressure on surface j caused by a normal rms velocity V_i on surface i . The area of surface j is A_j , the entire surface area of the ring is A , and ρ is the

density of the medium. In Eq. (4) it is assumed that the velocity V_i is constant or can be approximated by a constant over the surface(s) i . The total complex power P radiated is

$$P = \sum_{i,j=1}^3 \rho c A V_i Z_{ij} V_j^* \quad (5)$$

where the asterisk denotes the complex conjugate.

If one wishes to define a single impedance Z for the entire ring, it is necessary to choose an appropriate reference velocity V . For example, V may be the velocity of the mean radius, or V_1 , V_2 , or V_3 , or any linear combination of these. Then, by definition,

$$P = Z V V^*, \quad (6)$$

so that

$$Z = \frac{\sum_{i,j=1}^3 \rho c A V_i Z_{ij} V_j^*}{V V^*}. \quad (7)$$

If

$$\begin{aligned} Z_1 &\equiv Z_{11}, \\ Z_2 &\equiv Z_{22}, \\ Z_3 &\equiv Z_{33}, \\ Z'_1 &\equiv Z_{23} + Z_{32}, \\ Z'_2 &\equiv Z_{31} + Z_{13}, \end{aligned} \quad (8)$$

and

$$Z'_3 \equiv Z_{12} + Z_{21},$$

then the radiation impedance is given by

$$Z = \frac{\rho c A}{V V^*} \left[\sum_{i=1}^3 Z_i |V_i|^2 + \text{Re} \left(Z'_1 V_2 V_3^* + Z'_2 V_3 V_1^* + Z'_3 V_1 V_2^* \right) \right].$$

The quantities Z_i and Z'_i are listed in the tables of impedance coefficients. If the velocities are real and the reference velocity is unity, then the expression for the radiation impedance becomes

$$Z = \rho c A \left(\sum_{i=1}^3 Z_i V_i^2 + Z'_1 V_2 V_3 + Z'_2 V_3 V_1 + Z'_3 V_1 V_2 \right)$$

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where now the velocities V_i are unitless. As an example, suppose we have an isotropic ring whose dimensions are $a = 0.1$ m, $h = 0.2$ m, and $t = 0.02$ m, and we want to know the radiation impedance Z in water at 2387 Hz. For this example, assume that the relative surface velocity distribution of the ring is that of the ring vibrating in a vacuum at its first radial resonance. Assume further that this velocity distribution can be approximated with sufficient accuracy by

$$V_1 = -1 - \frac{1}{2} T\sigma,$$

$$V_2 = -\frac{1}{2} H\sigma,$$

and

$$V_3 = 1 - \frac{1}{2} T\sigma$$

where σ is Poisson's ratio and the velocity distribution represents surface velocities relative to the reference mean radial velocity [2]. If σ is chosen to be 0.3, the relative velocities (unitless numbers) become $V_1 = -1.030$, $V_2 = -0.300$, and $V_3 = 0.970$. The impedance coefficient tables in Appendix A are listed according to the values of T and H . For each geometry, the corresponding table lists impedance coefficients as a function of ka . In this example, $T = 0.2$, $H = 2.0$, and $ka = 1.0$. The problem is to evaluate

$$Z = \rho c A \left(\sum_{i=1}^3 Z_i V_i^2 + Z'_1 V_2 V_3 + Z'_2 V_3 V_1 + Z'_3 V_1 V_2 \right).$$

For water, ρc is 1.5×10^6 kg/s m². The total surface area A of the ring is 0.2765 m². The values of V_i have been determined previously and the impedance coefficients are listed in Table A23a. The radiation impedance in this example is $(1.627 \times 10^6 + j 1.064 \times 10^6)$ kg/s or mks mechanical ohms. The convention here is that massive reactances are positive. (Large negative reactances can occur in the region of a strong cavity resonance; i.e., the radiation reactance becomes springlike.)

Interpolation between frequencies listed is valid as long as the impedances are not changing too rapidly. Interpolation between geometries can be used to indicate trends. The numerical value of the impedance obtained in this way is unlikely to be accurate.

The pressure coefficients p_i^0 and p_i^{90} are unitless complex numbers from which the far-field pressure along the radial and axial directions, respectively, can be calculated according to

$$p = \frac{\rho c A}{d} \sum_{i=1}^3 V_i p_i$$

where d is the distance at which the pressure is to be determined and the values of V_i are the actual (not relative) surface velocities of the ring. For p^0 , substitute the p_i^0 coefficients; for p^{90} , substitute the p_i^{90} coefficients. The only pressure coefficients

listed in the tables in Appendix A are those corresponding to 0° and 90° ; however, pressure coefficients have been determined at 5° intervals and are stored on magnetic tape. (These coefficients are available on request.) The reason the formula for far-field pressure is simple is that linear superposition holds.

In the previous example, assume that the far-field pressure at 1 m is to be determined when the mean radial velocity is 1 m/s. In this case the relative surface velocities listed are the actual surface velocities and the quantity $\rho c a/d$ is 1.5×10^5 . The far-field pressure at 1 m is $|p^0| = 6.192 \times 10^5$ Pa, or 235.8 dB re 1 μ Pa at 1 m, and $|p^{90}| = 7.419 \times 10^4$ Pa, or 217.4 dB re 1 μ Pa at 1 m.

These pressures are for a ring vibrating with a mean radial velocity of 1 m/s, an abnormally large value for the usual transducer materials and a ring of the geometry of this example. This is the reason for the high far-field pressure. The actual pressure decreases linearly as the mean radial velocity of the ring is reduced.

The values of the resistive portion of the impedance coefficients at low frequencies for rings of small t/a ratio have errors somewhat larger than 1%. However, these occur well into the region where the radiation is monopole. A simple formula for predicting the radiation resistance will be presented in the next section. Also, for certain combinations of ring geometry and velocity distribution, a large subtraction error results from using the tables for calculating the radiation resistance in the monopole region. Again the cure is to use the monopole radiation formulas presented in the next section. The tables can easily be extended to even lower frequencies because in the monopole region the radiation reactance and the magnitude of the far-field pressure are directly proportional to the frequency and the radiation resistance is proportional to the square of the frequency. The same guidelines apply to pressure interpolation as apply to impedance interpolation.

LOW-FREQUENCY VELOCITY DISTRIBUTIONS

At frequencies somewhat below the first mechanical resonance of the free-flooded ring, the ring is essentially in static equilibrium with whatever driving force is causing the ring to vibrate. As a specific example we will consider a piezoceramic ring driven in three different ways [3,4]. The first case is a ring driven through its thickness t ; i.e., a ring polarized and driven with electrodes on the inside and outside surfaces. Only one constitutive relation is needed to establish the velocity distribution:

$$\mathcal{S} = \mathbf{s}^{\mathcal{E}} \mathcal{T} + \mathbf{d}_t \mathcal{E}$$

where $\mathcal{S}$ is the strain, $\mathbf{s}^{\mathcal{E}}$ is the compliance matrix at constant electric field, $\mathcal{T}$ is the stress, $\mathbf{d}$ is a matrix giving the strain per applied electric field, and $\mathcal{E}$ is the applied electric field [5]. For low-frequency operation, assume static equilibrium at any instant of time; i.e., set $\mathcal{T} = 0$. Note that this condition does not preclude the possibility of a pre-stressed ring. Thus,

$$\mathcal{S} = \mathbf{d}_t \mathcal{E}.$$

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The usual convention is to let the 3 direction be the polarization direction, and in our case it will also correspond to the direction of the applied field $\mathcal{E}$. Since at any fixed frequency the velocity is proportional to the strain, it is easily shown that the relative velocity distribution is given by

$$V_1 = -1 - \frac{1}{2} T \frac{1}{\sigma'},$$

$$V_2 = \frac{1}{2} H,$$

and

$$V_3 = 1 - \frac{1}{2} T \frac{1}{\sigma'}$$

where

$$\sigma' = -\frac{d_{31}}{d_{33}}.$$

The second case to consider is the one in which the ring is driven through its height h ; i.e., the ring is polarized and driven with electrodes on the top and bottom surfaces. The analysis is again straightforward, and the resulting relative velocity distribution is

$$V_1 = -1 + \frac{1}{2} T,$$

$$V_2 = -\frac{1}{2} H \frac{1}{\sigma'},$$

and

$$V_3 = 1 + \frac{1}{2} T$$

where again

$$\sigma' = -\frac{d_{31}}{d_{33}}.$$

In the third case the ring is circumferentially driven. This can be achieved if the ring is divided into an even number of segments separated by electrodes. The assembled ring is then polarized and driven with these electrodes, resulting in circumferential fields and hence circumferential drive. The analysis is again straightforward, and the resulting velocity distribution is

$$V_1 = -1 - \frac{1}{2} T \sigma',$$

$$V_2 = -\frac{1}{2} H \sigma',$$

and

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$$V_3 = 1 - \frac{1}{2} T\sigma'$$

where again

$$\sigma' = -\frac{d_{31}}{d_{33}}.$$

Another important case to consider is the velocity distribution at the first radial resonance of an isotropic ring. If it were possible to excite such a ring and the ring were not loaded heavily acoustically, then its velocity distribution would be approximated [2] by

$$V_1 = -1 - \frac{1}{2} T\sigma,$$

$$V_2 = -\frac{1}{2} H\sigma,$$

and

$$V_3 = 1 - \frac{1}{2} T\sigma$$

where σ is Poisson's ratio for the material. These velocity distributions are all relative to a unit mean radial velocity.

LOW-FREQUENCY RADIATION CHARACTERISTICS

At sufficiently low frequencies, the radiation from free-flooded rings is monopole. In this case simple formulas can be developed to predict the radiation resistance and the far-field pressure. The radiation resistance R is given by

$$R = \rho c \pi a^2 (ka)^2 \left[2V_2 T + (V_1 + V_3) H + \frac{1}{2} (V_3 - V_1) HT \right]^2$$

where V_1 , V_2 , and V_3 are relative velocities; i.e., unitless relative to a unit mean radial velocity. For a mean radial velocity V , the far-field pressure at distance d is given by

$$p = \frac{V}{d} \left[\frac{\rho c R}{4\pi} \right]^{1/2}.$$

CONCLUDING REMARKS

The formulas presented were experimentally tested, and agreement was quite good [3,4]. A novel application of the data in the tables is to measure the low-frequency directivity patterns as a function of frequency for a piezoceramic ring. The best value of $\sigma' = -d_{31}/d_{33}$ that accurately predicts the quantity $|p^0/p^{90}|$ is a good measure of the ratio of the two parameters d_{31} and d_{33} . This was tried and the agreement with published values was again quite good [3,4].

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REFERENCES

1. P.H. Rogers, "SHIP (Simplified-Helmholtz Integral Program), A Fast Computer Program for Calculating the Acoustic Radiation and Radiation Impedance for Free-Flooded-Ring and Finite-Circular-Cylinder Sources," NRL Report 7240, June 19, 1972.
2. J.A. Sinsky, *IEEE Trans. SU* 21, 45 (1974).
3. J.F. Zalesak and P.H. Rogers, "Low Frequency Radiation Characteristics of Free-Flooded Ring Transducers with Applications to a Low Frequency Directional Hydrophone," accepted for publication in the Journal of the Acoustical Society of America.
4. J.F. Zalesak and P.H. Rogers, "Low-Frequency Acoustic Radiation From Free-Flooded Ring Transducers Driven Through the Circumference, Thickness, or Height," *J. Acoust. Soc. Amer.* 55A, 471 (1974).
5. H.W. Katz, editor, *Solid State Magnetic and Dielectric Devices*, Chap. 3, John Wiley & Sons, Inc., New York, 1959.

Appendix A

IMPEDANCE AND PRESSURE COEFFICIENTS

LIST OF TABLES

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Table A1a
Impedance Coefficients
 $T = 0.05 \quad H = 0.1$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9
0.01	1.578-004	1.667-006	1.756-004	1.878-004	3.421-006	4.956-004	3.329-006	4.170-004	3.244-006
0.05	3.943-005	4.163-005	4.385-005	1.938-003	3.545-005	2.475-003	8.317-005	2.082-003	8.104-005
0.10	1.574-004	1.661-004	1.749-004	3.866-003	3.409-004	4.934-003	3.318-004	4.068-003	3.234-004
0.15	3.529-004	3.721-004	3.914-004	5.777-003	7.635-004	7.358-003	7.435-004	6.183-003	7.248-004
0.20	6.242-004	6.577-004	6.914-004	7.661-003	1.349-003	9.5712-003	1.314-003	8.169-003	1.281-003
0.30	1.395-003	1.455-003	1.525-003	1.132-002	2.979-003	1.627-002	2.907-003	1.194-002	2.839-003
0.40	2.417-003	2.526-003	2.639-003	1.477-002	5.163-003	1.842-002	5.046-003	1.535-002	4.937-003
0.50	3.675-003	3.827-003	3.980-003	1.798-002	7.805-003	2.210-002	7.648-003	1.831-002	7.500-003
0.60	5.128-003	5.309-003	5.488-003	2.090-002	1.080-002	2.523-002	1.061-002	2.075-002	1.044-002
0.70	6.726-003	6.912-003	7.097-003	2.351-002	1.401-002	2.775-002	1.382-002	2.260-002	1.364-002
0.80	8.417-003	8.577-003	8.736-003	2.581-002	1.731-002	2.966-002	1.715-002	2.385-002	1.699-002
0.90	1.015-002	1.024-002	1.034-002	2.779-002	2.058-002	3.096-002	2.048-002	2.449-002	2.039-002
1.00	1.184-002	1.185-002	1.183-002	2.950-002	2.367-002	3.168-002	2.368-002	2.455-002	2.371-002
1.10	1.352-002	1.333-002	1.316-002	3.096-002	2.649-002	3.189-002	2.666-002	2.407-002	2.684-002
1.20	1.505-002	1.465-002	1.428-002	3.223-002	2.892-002	3.167-002	2.929-002	2.314-002	2.969-002
1.30	1.643-002	1.576-002	1.515-002	3.336-002	3.090-002	3.113-002	3.151-002	2.183-002	3.218-002
1.40	1.762-002	1.664-002	1.576-002	3.443-002	3.276-002	3.039-002	3.325-002	2.024-002	3.423-002
1.50	1.859-002	1.726-002	1.609-002	3.550-002	3.329-002	2.959-002	3.444-002	1.855-002	3.579-002
1.60	1.931-002	1.814-002	1.616-002	3.665-002	3.369-002	2.885-002	3.514-002	1.681-002	3.684-002
1.70	1.979-002	1.772-002	1.599-002	3.794-002	3.359-002	2.830-002	3.530-002	1.518-002	3.739-002
1.80	2.001-002	1.759-002	1.564-002	3.943-002	3.306-002	2.806-002	3.490-002	1.378-002	3.744-002
1.90	2.001-002	1.727-002	1.515-002	4.117-002	3.219-002	2.824-002	3.426-002	1.271-002	3.705-002
2.00	1.980-002	1.679-002	1.459-002	4.318-002	3.109-002	2.892-002	3.323-002	1.204-002	3.630-002
2.10	1.942-002	1.623-002	1.405-002	4.549-002	2.990-002	3.014-002	3.198-002	1.192-002	3.528-002
2.20	1.894-002	1.563-002	1.358-002	4.810-002	2.876-002	3.192-002	3.067-002	1.231-002	3.408-002
2.30	1.833-002	1.507-002	1.328-002	5.097-002	2.781-002	3.425-002	2.941-002	1.325-002	3.284-002
2.40	1.772-002	1.461-002	1.320-002	5.407-002	2.718-002	3.708-002	2.834-002	1.472-002	3.168-002
2.50	1.717-002	1.431-002	1.341-002	5.735-002	2.699-002	4.032-002	2.760-002	1.667-002	3.072-002
2.60	1.671-002	1.423-002	1.394-002	6.073-002	2.745-002	4.387-002	2.728-002	1.902-002	3.008-002
2.70	1.640-002	1.441-002	1.481-002	6.414-002	2.811-002	4.760-002	2.749-002	2.168-002	2.985-002
2.80	1.630-002	1.487-002	1.604-002	6.750-002	2.993-002	5.137-002	2.829-002	2.452-002	3.013-002
2.90	1.644-002	1.565-002	1.760-002	7.074-002	3.220-002	5.505-002	2.972-002	2.742-002	3.096-002
3.00	1.685-002	1.673-002	1.947-002	7.378-002	3.510-002	5.848-002	3.179-002	3.024-002	3.240-002
3.10	1.756-002	1.811-002	2.159-002	7.656-002	3.858-002	6.155-002	3.449-002	3.285-002	3.445-002
3.20	1.857-002	1.977-002	2.392-002	7.993-002	4.286-002	6.412-002	3.776-002	3.511-002	3.710-002
3.30	1.990-002	2.167-002	2.638-002	8.314-002	4.693-002	6.612-002	4.155-002	3.693-002	4.032-002
3.40	2.152-002	2.377-002	2.890-002	8.799-002	5.157-002	6.746-002	4.576-002	3.821-002	4.406-002
3.50	2.343-002	2.603-002	3.160-002	9.427-002	5.636-002	6.810-002	5.031-002	3.885-002	4.825-002
3.60	2.560-002	2.838-002	3.382-002	9.527-002	6.117-002	6.802-002	5.506-002	3.880-002	5.281-002
3.70	2.800-002	3.077-002	3.606-002	9.593-002	6.584-002	6.721-002	5.990-002	3.802-002	5.765-002
3.80	3.060-002	3.313-002	3.807-002	9.628-002	7.026-002	6.571-002	6.469-002	3.650-002	6.266-002
3.90	3.334-002	3.541-002	3.979-002	9.638-002	7.428-002	6.357-002	6.931-002	3.422-002	6.773-002
4.00	3.617-002	3.754-002	4.115-002	9.628-002	7.779-002	6.086-002	7.360-002	3.122-002	7.273-002
4.10	3.963-002	4.001-002	4.193-002	9.574-002	8.441-002	4.315-002	8.583-002	2.817-002	9.227-002
4.20	5.562-002	4.103-002	5.235-002	9.298-002	7.291-002	3.362-002	7.656-002	-1.440-002	9.311-002

Table A1b
Pressure Coefficients
 $T = 0.05 \quad H = 0.1$

k_{eff}	p_1^0	p_2^0	p_3^0	p_1^{40}	p_2^{40}	p_3^{40}
0.01	1.295-012	-4.975-004	1.324-012	-5.000-004	1.362-012	-5.125-004
0.05	8.075-010	-2.434-003	8.281-010	-2.561-003	8.488-010	-2.561-003
0.10	1.292-008	-4.865-003	1.314-008	-4.947-003	1.347-008	-4.875-003
0.15	6.404-008	-7.278-003	6.564-008	-7.458-003	6.724-008	-7.637-003
0.20	1.987-007	-9.668-003	2.035-007	-9.900-003	2.084-007	-1.013-002
0.30	9.528-007	-1.435-002	9.748-007	-1.466-002	9.969-007	-1.498-002
0.40	2.786-006	-1.895-002	2.845-006	-1.920-002	2.905-006	-1.956-002
0.50	6.130-006	-2.310-002	6.246-006	-2.346-002	6.362-006	-2.380-002
0.60	1.112-005	-2.707-002	1.130-005	-2.735-002	1.148-005	-2.762-002
0.70	1.738-005	-3.069-002	1.760-005	-3.083-002	1.783-005	-3.095-002
0.80	2.387-005	-3.392-002	2.411-005	-3.385-002	2.436-005	-3.374-002
0.90	2.887-005	-3.672-002	2.904-005	-3.634-002	2.933-005	-3.592-002
1.00	2.998-005	-3.908-002	3.020-005	-3.878-002	3.048-005	-3.746-002
1.10	2.428-005	-4.088-002	2.472-005	-3.962-002	2.525-005	-3.830-002
1.20	8.769-006	-4.214-002	9.013-006	-4.031-002	1.121-005	-3.843-002
1.30	-1.938-005	-4.285-002	-1.659-005	-4.039-002	-1.357-005	-3.783-002
1.40	-6.236-005	-4.292-002	-5.631-005	-3.979-002	-4.997-005	-3.647-002
1.50	-1.211-004	-4.252-002	-1.095-004	-3.851-002	-9.748-005	-3.438-002
1.60	-1.953-004	-4.145-002	-1.749-004	-3.656-002	-1.539-004	-3.156-002
1.70	-2.828-004	-3.976-002	-2.498-004	-3.396-002	-2.154-004	-2.803-002
1.80	-3.795-004	-3.747-002	-3.282-004	-3.071-002	-2.764-004	-2.383-002
1.90	-4.799-004	-3.459-002	-4.054-004	-2.695-002	-3.305-004	-1.900-002
2.00	-5.776-004	-3.113-002	-4.741-004	-2.270-002	-3.708-004	-1.362-002
2.10	-6.668-004	-2.713-002	-5.276-004	-1.746-002	-3.912-004	-0.746-002
2.20	-7.351-004	-2.262-002	-5.600-004	-1.205-002	-3.869-004	-0.1665-003
2.30	-7.827-004	-1.765-002	-5.675-004	-0.6235-003	-3.558-004	5.132-003
2.40	-8.049-004	-1.227-002	-5.489-004	-0.045-004	-2.990-004	1.194-002
2.50	-7.984-004	-6.539-003	-5.061-004	6.265-003	-2.214-004	1.887-002
2.60	-7.680-004	-5.214-004	-4.444-004	1.279-002	-1.312-004	2.581-002
2.70	-7.184-004	5.717-003	-3.725-004	1.938-002	-3.967-005	3.264-002
2.80	-6.585-004	1.211-002	-3.012-004	2.595-002	3.987-005	3.928-002
2.90	-5.984-004	1.859-002	-2.430-004	3.243-002	9.345-005	4.562-002
3.00	-5.499-004	2.509-002	-2.103-004	3.972-002	1.079-004	5.156-002
3.10	-5.266-004	3.155-002	-2.144-004	4.649-002	2.755-005	5.703-002
3.20	-5.121-004	3.791-002	-2.639-004	5.048-002	-1.966-005	6.195-002
3.30	-5.004-004	4.411-002	-3.636-004	5.582-002	-1.708-004	6.625-002
3.40	-4.910-004	5.010-002	-3.135-004	6.071-002	-3.774-004	6.986-002
3.50	-4.867-004	5.584-002	-2.702-004	6.511-002	-6.304-004	7.274-002
3.60	-4.784-004	6.128-002	-2.370-004	6.845-002	-9.151-004	7.484-002
3.70	-4.717-003	6.633-002	-1.184-003	7.221-002	-1.212-003	7.610-002
3.80	-4.670-003	7.101-002	-1.429-003	7.483-002	-1.500-003	7.650-002
3.90	-4.644-003	7.523-002	-1.649-003	7.677-002	-1.754-003	7.661-002
4.00	-4.631-003	7.898-002	-1.819-003	7.799-002	-1.950-003	7.659-002
4.10	-4.629-004	8.235-002	-1.214-003	7.206-002	-1.596-003	7.608-002
4.20	-4.639-004	7.735-002	1.576-003	4.443-002	-1.627-004	9.498-003
4.30	-4.652-003	7.101-002	-1.429-003	7.483-002	-1.500-003	7.650-002
4.40	-4.670-003	7.523-002	-1.649-003	7.677-002	-1.754-003	7.661-002
4.50	-4.684-003	7.898-002	-1.819-003	7.799-002	-1.950-003	7.659-002
4.60	-4.698-003	8.235-002	-1.214-003	7.206-002	-1.596-003	7.608-002
4.70	-4.717-003	8.633-002	-1.184-003	7.221-002	-1.212-003	7.610-002
4.80	-4.741-002	9.010-002	-0.6235-003	7.483-002	-1.500-003	7.650-002
4.90	-4.765-002	9.387-002	-0.1665-003	7.659-002	-1.754-003	7.661-002
5.00	-4.789-002	9.764-002	-0.1665-003	7.835-002	-1.950-003	7.659-002
5.10	-4.813-002	10.141-002	-0.1665-003	8.010-002	-2.146-003	7.657-002
5.20	-4.837-002	10.518-002	-0.1665-003	8.185-002	-2.341-003	7.655-002
5.30	-4.861-002	10.895-002	-0.1665-003	8.360-002	-2.536-003	7.653-002
5.40	-4.885-002	11.272-002	-0.1665-003	8.535-002	-2.731-003	7.651-002
5.50	-4.909-002	11.649-002	-0.1665-003	8.710-002	-2.926-003	7.649-002
5.60	-4.933-002	12.026-002	-0.1665-003	8.885-002	-3.121-003	7.647-002
5.70	-4.957-002	12.403-002	-0.1665-003	9.060-002	-3.316-003	7.645-002
5.80	-4.981-002	12.780-002	-0.1665-003	9.235-002	-3.511-003	7.643-002
5.90	-5.005-002	13.157-002	-0.1665-003	9.410-002	-3.706-003	7.641-002
6.00	-5.029-002	13.534-002	-0.1665-003	9.585-002	-3.901-003	7.639-002
6.10	-5.053-002	13.911-002	-0.1665-003	9.760-002	-4.096-003	7.637-002
6.20	-5.077-002	14.288-002	-0.1665-003	9.935-002	-4.291-003	7.635-002
6.30	-5.101-002	14.665-002	-0.1665-003	10.110-002	-4.486-003	7.633-002
6.40	-5.125-002	15.042-002	-0.1665-003	10.285-002	-4.681-003	7.631-002
6.50	-5.149-002	15.419-002	-0.1665-003	10.460-002	-4.876-003	7.629-002
6.60	-5.173-002	15.796-002	-0.1665-003	10.635-002	-5.071-003	7.627-002
6.70	-5.197-002	16.173-002	-0.1665-003	10.810-002	-5.266-003	7.625-002
6.80	-5.221-002	16.550-002	-0.1665-003	10.985-002	-5.461-003	7.623-002
6.90	-5.245-002	16.927-002	-0.1665-003	11.160-002	-5.656-003	7.621-002
7.00	-5.269-002	17.304-002	-0.1665-003	11.335-002	-5.851-003	7.619-002
7.10	-5.293-002	17.681-002	-0.1665-003	11.510-002	-6.046-003	7.617-002
7.20	-5.317-002	18.058-002	-0.1665-003	11.685-002	-6.241-003	7.615-002
7.30	-5.341-002	18.435-002	-0.1665-003	11.860-002	-6.436-003	7.613-002
7.40	-5.365-002	18.812-002	-0.1665-003	12.035-002	-6.631-003	7.611-002
7.50	-5.389-002	19.189-002	-0.1665-003	12.210-002	-6.826-003	7.609-002
7.60	-5.413-002	19.566-002	-0.1665-003	12.385-002	-7.021-003	7.607-002
7.70	-5.437-002	19.943-002	-0.1665-003	12.560-002	-7.216-003	7.605-002
7.80	-5.461-002	20.320-002	-0.1665-003	12.735-002	-7.411-003	7.603-002
7.90	-5.485-002	20.697-002	-0.1665-003	12.910-002	-7.606-003	7.601-002
8.00	-5.509-002	21.074-002	-0.1665-003	13.085-002	-7.801-003	7.599-002
8.10	-5.533-002	21.451-002	-0.1665-003	13.260-002	-8.000-003	7.597-002
8.20	-5.557-002	21.828-002	-0.1665-003	13.435-002	-8.195-003	7.595-002
8.30	-5.581-002	22.205-002	-0.1665-003	13.610-002	-8.390-003	7.593-002
8.40	-5.605-002	22.582-002	-0.1665-003	13.785-002	-8.585-003	7.591-002
8.50	-5.629-002	22.959-002	-0.1665-003	13.960-002	-8.780-003	7.589-002
8.60	-5.653-002	23.336-002	-0.1665-003	14.135-002	-8.975-003	7.587-002
8.70	-5.677-002	23.713-002	-0.1665-003	14.310-002	-9.170-003	7.585-002
8.80	-5.701-002	24.090-002	-0.1665-003	14.485-002	-9.365-003	7.583-002
8.90	-5.725-002	24.467-002	-0.1665-003	14.660-002	-9.560-003	7.581-002
9.00	-5.749-002	24.844-002	-0.1665-003	14.835-002	-9.755-003	7.579-002
9.10	-5.773-002	25.221-002	-0.1665-003	15.010-002	-9.950-003	7.577-002
9.20	-5.797-002	25.598-002	-0.1665-003	15.185-002	-10.145-003	7.575-002
9.30	-5.821-002	25.975-002	-0.1665-003	15.360-002	-10.340-003	7.573-002
9.40	-5.845-002	26.352-002	-0.1665-003	15.535-002	-10.535-003	7.571-002
9.50	-5.869-002	26.729-002	-0.1665-003	15.710-002	-10.730-003	7.569-002
9.60	-5.893-002	27.106-002	-0.1665-003	15.885-002	-10.925-003	7.567-002
9.70	-5.917-002	27.483-002	-0.1665-003	16.060-002	-11.120-003	7.565-002
9.80	-5.941-002	27.860-002	-0.1665-003	16.235-002	-11.315-003	7.563-002
9.90	-5.965-002	28.237-002	-0.1665-003	16.410-002	-11.510-003	7.561-002
10.00	-5.989-002	28.614-002	-0.1665-003	16.585-002	-11.705-003	7.559-002

Table A2a
Impedance Coefficients
 $T = 0.1 \quad H = 0.1$

k_a	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9	Z_{10}	Z_{11}	Z_{12}
0.01	1.130-006	2.889-004	5.000-006	8.744-004	1.376-006	2.995-004	5.246-006	7.033-004	2.495-006	2.860-004	4.755-006	6.920-004
0.05	2.824-005	1.443-003	1.249-004	4.368-003	3.437-005	1.496-003	1.310-004	3.512-003	6.231-005	1.428-003	1.188-004	3.456-003
0.10	1.127-004	2.882-003	4.983-004	8.712-003	1.371-006	2.985-003	5.226-004	6.997-003	2.486-004	2.844-003	4.740-004	6.891-003
0.15	2.528-004	4.311-003	1.116-003	1.301-002	3.068-004	4.460-003	1.170-003	1.043-002	5.570-004	4.236-003	1.062-003	1.028-002
0.20	4.473-004	5.726-003	1.972-003	1.723-002	5.414-004	5.913-003	2.067-003	1.378-002	9.842-004	5.592-003	1.879-003	1.361-002
0.30	9.930-004	8.496-003	4.362-003	2.538-002	1.193-003	8.728-003	4.562-003	2.016-002	2.177-003	8.151-003	4.162-003	1.999-002
0.40	1.732-003	1.116-002	7.569-003	3.298-002	2.050-003	1.138-002	7.897-003	2.594-002	3.778-003	1.044-002	7.242-003	2.588-002
0.50	2.642-003	1.368-002	1.147-002	3.991-002	3.099-003	1.384-002	1.192-002	3.097-002	5.723-003	1.238-002	1.101-002	3.115-002
0.60	3.694-003	1.604-002	1.590-002	4.604-002	4.262-003	1.607-002	1.646-002	3.516-002	7.935-003	1.393-002	1.532-002	3.570-002
0.70	4.856-003	1.821-002	2.069-002	5.131-002	5.493-003	1.805-002	2.132-002	3.842-002	1.033-002	1.504-002	2.004-002	3.944-002
0.80	6.093-003	2.020-002	2.566-002	5.568-002	6.737-003	1.979-002	2.629-002	4.072-002	1.281-002	1.569-002	2.501-002	4.234-002
0.90	7.370-003	2.198-002	3.062-002	5.916-002	7.937-003	2.129-002	3.118-002	4.210-002	1.529-002	1.589-002	3.004-002	4.437-002
1.00	8.650-003	2.356-002	3.540-002	6.177-002	9.043-003	2.258-002	3.578-002	4.260-002	1.767-002	1.564-002	3.499-002	4.556-002
1.10	9.897-003	2.494-002	3.983-002	6.360-002	1.001-002	2.369-002	3.992-002	4.234-002	1.988-002	1.500-002	3.970-002	4.595-002
1.20	1.108-002	2.615-002	4.376-002	6.476-002	1.080-002	2.466-002	4.345-002	4.145-002	2.183-002	1.400-002	4.401-002	4.562-002
1.30	1.216-002	2.719-002	4.706-002	6.537-002	1.139-002	2.554-002	4.626-002	4.009-002	2.346-002	1.271-002	4.781-002	4.668-002
1.40	1.311-002	2.809-002	4.966-002	6.560-002	1.177-002	2.640-002	4.828-002	3.846-002	2.473-002	1.122-002	5.098-002	4.725-002
1.50	1.392-002	2.888-002	5.168-002	6.563-002	1.193-002	2.727-002	4.947-002	3.676-002	2.560-002	9.615-003	5.346-002	4.148-002
1.60	1.456-002	2.960-002	5.252-002	6.563-002	1.190-002	2.823-002	4.984-002	3.520-002	2.605-002	7.984-003	5.518-002	3.953-002
1.70	1.502-002	3.028-002	5.279-002	6.580-002	1.170-002	2.933-002	4.946-002	3.398-002	2.611-002	6.424-003	5.614-002	3.757-002
1.80	1.530-002	3.096-002	5.236-002	6.632-002	1.136-002	3.060-002	4.845-002	3.327-002	2.579-002	5.028-003	5.636-002	3.577-002
1.90	1.540-002	3.168-002	5.133-002	6.734-002	1.095-002	3.208-002	4.694-002	3.324-002	2.515-002	3.881-003	5.589-002	3.430-002
2.00	1.533-002	3.248-002	4.986-002	6.900-002	1.052-002	3.379-002	4.513-002	3.400-002	2.426-002	3.054-003	5.483-002	3.331-002
2.10	1.512-002	3.339-002	4.809-002	7.141-002	1.012-002	3.573-002	4.324-002	3.561-002	2.320-002	2.604-003	5.330-002	3.293-002
2.20	1.479-002	3.445-002	4.624-002	7.462-002	9.833-003	3.790-002	4.148-002	3.809-002	2.207-002	2.562-003	5.146-002	3.326-002
2.30	1.438-002	3.568-002	4.449-002	7.864-002	9.705-003	4.027-002	4.008-002	4.139-002	2.098-002	2.940-003	4.948-002	3.436-002
2.40	1.392-002	3.709-002	4.305-002	8.344-002	9.789-003	4.279-002	3.924-002	4.542-002	2.003-002	3.723-003	4.754-002	3.625-002
2.50	1.346-002	3.871-002	4.209-002	8.893-002	1.012-002	4.541-002	3.915-002	5.002-002	1.931-002	4.869-003	4.583-002	3.891-002
2.60	1.304-002	4.052-002	4.178-002	9.499-002	1.072-002	4.807-002	3.993-002	5.502-002	1.891-002	6.320-003	4.451-002	4.228-002
2.70	1.269-002	4.252-002	4.224-002	1.015-001	1.160-002	5.070-002	4.167-002	6.019-002	1.690-002	7.996-003	4.375-002	4.627-002
2.80	1.246-002	4.469-002	4.355-002	1.082-001	1.275-002	5.324-002	4.441-002	6.533-002	1.933-002	9.807-003	4.367-002	5.074-002
2.90	1.237-002	4.701-002	4.575-002	1.150-001	1.414-002	5.564-002	4.812-002	7.021-002	2.022-002	1.165-002	4.435-002	5.556-002
3.00	1.246-002	4.944-002	4.884-002	1.216-001	1.574-002	5.783-002	5.273-002	7.562-002	2.158-002	1.344-002	4.588-002	6.057-002
3.10	1.275-002	5.197-002	5.279-002	1.279-001	1.749-002	5.979-002	5.813-002	8.133-002	2.339-002	1.506-002	4.827-002	6.559-002
3.20	1.324-002	5.455-002	5.752-002	1.338-001	1.935-002	6.149-002	6.418-002	8.133-002	2.562-002	1.643-002	5.152-002	7.048-002
3.30	1.395-002	5.715-002	6.293-002	1.390-001	2.125-002	6.289-002	7.072-002	8.336-002	2.822-002	1.747-002	5.560-002	7.507-002
3.40	1.489-002	5.973-002	6.890-002	1.435-001	2.314-002	6.402-002	7.755-002	8.440-002	3.113-002	1.811-002	6.046-002	7.922-002
3.50	1.604-002	6.227-002	7.530-002	1.472-001	2.496-002	6.487-002	8.449-002	8.438-002	3.427-002	1.830-002	6.632-002	8.280-002
3.60	1.741-002	6.472-002	8.198-002	1.500-001	2.665-002	6.546-002	9.134-002	8.331-002	3.757-002	1.798-002	7.220-002	8.569-002
3.70	1.898-002	6.705-002	8.878-002	1.518-001	2.817-002	6.582-002	9.790-002	8.121-002	4.093-002	1.712-002	7.888-002	8.779-002
3.80	2.075-002	6.924-002	9.555-002	1.527-001	2.946-002	6.600-002	1.040-001	7.814-002	4.427-002	1.572-002	8.594-002	8.900-002
3.90	2.268-002	7.125-002	1.021-001	1.526-001	3.050-002	6.603-002	1.094-002	7.818-002	4.748-002	1.375-002	9.325-002	8.924-002
4.00	2.477-002	7.304-002	1.083-001	1.516-001	3.125-002	6.598-002	1.140-001	6.945-002	5.048-002	1.124-002	1.007-001	8.847-002
4.50	3.619-002	7.785-002	1.279-001	1.357-001	3.049-002	6.675-002	1.203-001	4.089-002	5.857-002	-7.850-003	1.326-001	6.886-002
5.00	4.401-002	7.532-002	1.195-001	1.191-001	2.595-002	7.488-002	9.990-002	2.739-002	4.916-002	-2.728-002	1.384-001	3.297-002

Table A2b
Pressure Coefficients
 $T = 0.1$ $H = 0.1$

k_u	ρ_1^0	ρ_2^0	ρ_3^0	ρ_4^0	ρ_5^0	ρ_6^0	ρ_7^0	ρ_8^0	ρ_9^0	ρ_{10}^0	ρ_{11}^0	ρ_{12}^0
0.01	2.335-012	-4.750-004	4.915-012	-1.000-003	2.580-012	-5.250-004	-1.154-011	-4.750-004	5.000-012	-1.000-003	-1.275-011	-5.250-004
0.05	1.456-009	-2.374-003	3.065-009	-4.997-003	1.609-009	-2.623-003	1.412-009	-2.375-003	3.122-009	-5.000-003	1.560-009	-2.625-003
0.10	2.313-008	-4.741-003	4.868-008	-9.975-003	2.555-008	-5.234-003	2.367-008	-4.750-003	4.983-008	-9.999-003	2.614-008	-5.250-003
0.15	1.157-007	-7.093-003	2.434-007	-1.491-002	1.277-007	-7.820-003	1.193-007	-7.124-003	5.982-007	-1.500-002	1.317-007	-7.874-003
0.20	3.598-007	-9.424-003	7.563-007	-1.980-002	3.965-007	-1.037-002	3.753-007	-9.497-003	7.390-007	-1.999-002	4.136-007	-1.050-002
0.30	1.736-006	-1.400-002	3.643-006	-2.932-002	1.907-006	-1.531-002	1.871-006	-1.424-002	3.926-006	-2.997-002	2.054-006	-1.574-002
0.40	5.126-006	-1.840-002	1.073-005	-3.839-002	5.600-006	-1.990-002	5.787-006	-1.498-002	1.211-005	-3.994-002	6.321-006	-2.098-002
0.50	1.143-005	-2.259-002	2.385-005	-4.684-002	1.241-005	-2.076-002	1.374-005	-2.371-002	2.866-005	-4.988-002	1.491-005	-2.621-002
0.60	2.113-005	-2.651-002	4.391-005	-5.466-002	2.276-005	-2.810-002	2.755-005	-2.843-002	5.721-005	-5.981-002	2.965-005	-3.143-002
0.70	3.393-005	-3.012-002	7.018-005	-6.161-002	3.623-005	-3.142-002	4.905-005	-3.315-002	1.013-004	-6.971-002	5.226-005	-3.665-002
0.80	4.849-005	-3.337-002	9.983-005	-6.762-002	5.131-005	-3.414-002	7.991-005	-3.785-002	1.642-004	-7.958-002	8.417-005	-4.180-002
0.90	6.232-005	-3.623-002	1.277-004	-7.260-002	6.536-005	-3.622-002	1.215-005	-4.256-002	2.479-004	-8.943-002	1.263-004	-4.706-002
1.00	7.179-005	-3.866-002	1.466-004	-7.646-002	7.483-005	-3.760-002	1.747-004	-4.725-002	3.539-004	-9.926-002	1.789-004	-5.226-002
1.10	7.239-005	-4.062-002	1.479-004	-7.913-002	7.565-005	-3.825-002	2.398-004	-5.195-002	4.817-004	-1.091-001	2.416-004	-5.746-002
1.20	5.914-005	-4.210-002	1.227-004	-8.055-002	6.383-005	-3.815-002	3.163-004	-5.664-002	6.297-004	-1.189-001	3.129-004	-6.266-002
1.30	2.719-005	-4.306-002	6.271-005	-8.068-002	3.619-005	-3.726-002	4.032-004	-6.133-002	7.948-004	-1.286-001	3.910-004	-6.786-002
1.40	2.757-005	-4.348-002	-3.768-005	-7.948-002	-7.884-006	-3.559-002	4.986-004	-6.602-002	9.725-004	-1.384-001	4.732-004	-7.308-002
1.50	-1.077-004	-4.334-002	-1.805-004	-7.693-002	-7.081-005	-3.313-002	6.001-004	-7.072-002	1.157-003	-1.481-001	5.585-004	-7.826-002
1.60	-2.137-004	-4.263-002	-3.631-004	-7.308-002	-1.464-004	-2.991-002	7.047-004	-7.541-002	1.343-003	-1.578-001	6.349-004	-8.346-002
1.70	-3.435-004	-4.133-002	-5.774-004	-6.781-002	-2.296-004	-2.595-002	8.093-004	-8.011-002	1.524-003	-1.675-001	7.146-004	-8.865-002
1.80	-4.922-004	-3.946-002	-8.099-004	-6.129-002	-2.130-002	-2.130-002	9.107-004	-8.481-002	1.694-003	-1.771-001	7.845-004	-9.393-002
1.90	-6.522-004	-3.700-002	-1.043-003	-5.354-002	-3.844-004	-1.602-002	1.006-003	-8.950-002	1.850-003	-1.867-001	8.668-004	-9.904-002
2.00	-8.139-004	-3.398-002	-1.257-003	-4.463-002	-4.358-004	-1.017-002	1.093-003	-9.418-002	1.991-003	-1.967-001	9.021-004	-1.041-001
2.10	-9.666-004	-3.041-002	-1.438-003	-3.467-002	-4.576-004	-3.846-003	1.172-003	-9.984-002	2.117-003	-2.057-001	9.526-004	-1.093-001
2.20	-1.100-003	-2.633-002	-1.550-003	-2.379-002	-4.436-004	2.858-003	1.241-003	-1.035-001	2.233-003	-2.151-001	1.003-003	-1.143-001
2.30	-1.204-003	-2.178-002	-1.600-003	-1.213-002	-3.919-004	9.832-003	1.304-003	-1.081-001	2.348-003	-2.243-001	1.059-003	-1.194-001
2.40	-1.272-003	-1.680-002	-1.579-003	-1.478-004	-3.061-004	1.696-002	1.364-003	-1.172-001	2.474-003	-2.335-001	1.129-003	-1.244-001
2.50	-1.303-003	-1.166-002	-1.493-003	1.287-002	-1.956-004	2.493-002	1.426-003	-1.172-001	2.624-003	-2.425-001	1.221-003	-1.293-001
2.60	-1.299-003	-5.799-003	-1.361-003	2.586-002	-7.503-005	3.121-002	1.498-003	-1.217-001	2.816-003	-2.514-001	1.347-003	-1.343-001
2.70	-1.265-003	1.076-004	-1.208-003	3.893-002	3.668-005	3.809-002	1.588-003	-1.262-001	3.070-003	-2.602-001	1.516-003	-1.391-001
2.80	-1.215-003	6.201-003	-1.067-003	5.192-002	1.182-004	4.666-002	1.704-003	-1.366-001	3.403-003	-2.688-001	1.737-003	-1.440-001
2.90	-1.161-003	1.242-002	-9.741-003	6.465-002	1.483-003	5.081-002	1.856-003	-1.349-001	3.834-003	-2.773-001	2.018-003	-1.488-001
3.00	-1.120-003	1.876-002	-9.667-004	7.700-002	-2.647-002	5.647-002	2.054-003	-1.392-001	4.379-003	-2.857-001	2.366-003	-1.536-001
3.10	-1.109-003	2.500-002	-1.076-003	8.879-002	-1.760-005	6.153-002	2.307-003	-1.435-001	5.053-003	-2.940-001	2.784-003	-1.583-001
3.20	-1.142-003	3.128-002	-1.326-003	9.991-002	-2.358-004	6.594-002	2.624-003	-1.478-001	5.865-003	-3.023-001	3.274-003	-1.631-001
3.30	-1.231-003	3.744-002	-1.729-003	1.103-001	-5.469-004	6.963-002	3.011-003	-1.520-001	6.827-003	-3.1104-001	3.636-003	-1.679-001
3.40	-1.382-003	4.349-002	-2.282-003	1.197-001	-9.424-004	7.255-002	3.474-003	-1.562-001	7.927-003	-3.186-001	4.464-003	-1.728-001
3.50	-1.593-003	4.938-002	-2.968-003	1.282-001	-1.465-002	7.465-002	4.019-003	-1.604-001	9.177-003	-3.267-001	5.152-003	-1.777-001
3.60	-1.859-003	5.507-002	-3.757-003	1.357-001	-1.913-003	7.590-002	4.649-003	-1.646-001	1.057-002	-3.349-001	5.891-003	-1.876-001
3.70	-2.164-003	6.052-002	-4.601-003	1.420-001	-2.433-003	7.565-002	5.363-003	-1.688-001	1.209-002	-3.430-001	6.667-003	-1.876-001
3.80	-2.484-003	6.571-002	-5.441-003	1.471-001	-2.932-003	7.569-002	6.162-003	-1.730-001	1.371-002	-3.512-001	7.469-003	-1.927-001
3.90	-2.791-003	7.059-002	-6.210-003	1.510-001	-3.374-003	7.418-002	7.040-003	-1.773-001	1.543-002	-3.595-001	8.274-003	-1.978-001
4.00	-3.048-003	7.512-002	-6.835-003	1.535-001	-3.726-003	7.170-002	7.990-003	-1.817-001	1.721-002	-3.679-001	9.067-003	-2.031-001
4.10	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.20	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.30	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.40	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.50	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.60	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.70	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.80	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
4.90	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001
5.00	-2.138-003	8.055-002	-5.583-003	1.427-001	-3.673-003	4.432-002	1.330-002	-2.050-001	2.568-002	-4.114-001	1.209-002	-2.301-001

Table A3a
Impedance Coefficients
 $T = 0.2 \quad H = 0.1$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9	Z_{10}	Z_{11}	Z_{12}	Z_{13}	Z_{14}	Z_{15}	Z_{16}	Z_{17}	Z_{18}	Z_{19}	Z_{20}
0.01	6.750-007	1.834-004	1.333-005	2.098-003	1.009-006	2.125-004	7.335-006	8.796-004	1.651-006	1.673-004	5.999-006	8.108-004								
0.05	1.686-005	9.166-004	3.330-004	1.048-002	2.520-005	1.052-003	1.832-004	4.392-003	4.123-005	8.353-004	1.499-004	4.050-003								
0.10	6.733-005	1.831-003	1.328-003	2.090-002	1.004-004	2.118-003	7.305-004	8.764-004	1.665-004	1.667-003	5.981-004	8.073-003								
0.15	1.510-004	2.739-003	2.975-003	3.118-002	2.247-004	3.163-003	1.635-003	1.302-002	3.684-004	2.473-003	1.341-003	1.204-002								
0.20	2.674-004	3.440-003	5.256-003	4.128-002	3.961-004	4.191-003	2.886-003	1.711-002	6.509-004	3.259-003	2.371-003	1.593-002								
0.30	5.942-004	5.407-003	1.162-002	6.064-002	8.706-004	6.178-003	6.360-003	2.502-002	1.439-003	4.729-003	5.255-003	2.337-002								
0.40	1.039-003	7.117-003	2.014-002	7.856-002	1.498-003	8.042-003	1.099-002	3.200-002	2.494-003	6.015-003	9.147-003	3.020-002								
0.50	1.588-003	8.741-003	3.048-002	9.465-002	2.244-003	9.756-003	1.654-002	3.792-002	3.775-003	7.070-003	1.391-002	3.625-002								
0.60	2.727-003	1.028-002	4.221-002	1.086-001	3.069-003	1.130-002	2.276-002	4.263-002	5.228-003	7.857-003	1.939-002	4.141-002								
0.70	2.940-003	1.171-002	5.488-002	1.203-001	3.931-003	1.266-002	2.937-002	4.602-002	6.797-003	8.351-003	2.540-002	4.557-002								
0.80	3.707-003	1.303-002	6.799-002	1.296-001	4.786-003	1.385-002	3.607-002	4.810-002	8.419-003	8.538-003	3.175-002	4.866-002								
0.90	4.511-003	1.424-002	8.107-002	1.365-001	5.594-003	1.487-002	4.258-002	4.888-002	1.003-002	8.418-003	3.824-002	5.067-002								
1.00	5.330-003	1.532-002	9.364-002	1.412-001	6.317-003	1.575-002	4.862-002	4.848-002	1.158-002	8.003-003	4.467-002	5.161-002								
1.10	6.147-003	1.629-002	1.053-001	1.438-001	6.925-003	1.651-002	5.395-002	4.704-002	1.301-002	7.313-003	5.085-002	5.152-002								
1.20	6.941-003	1.714-002	1.156-001	1.446-001	7.394-003	1.719-002	5.838-002	4.483-002	1.426-002	6.384-003	5.660-002	5.047-002								
1.30	7.695-003	1.789-002	1.243-001	1.440-001	7.711-003	1.783-002	6.177-002	4.202-002	1.529-002	5.257-003	6.175-002	4.858-002								
1.40	8.390-003	1.854-002	1.310-001	1.423-001	7.872-003	1.848-002	6.400-002	3.891-002	1.607-002	3.983-003	6.617-002	4.599-002								
1.50	9.010-003	1.910-002	1.358-001	1.401-001	7.883-003	1.918-002	6.507-002	3.581-002	1.657-002	2.821-003	6.973-002	4.285-002								
1.60	9.542-003	1.960-002	1.384-001	1.378-001	7.765-003	1.996-002	6.502-002	3.299-002	1.679-002	1.233-003	7.235-002	3.937-002								
1.70	9.973-003	2.004-002	1.390-001	1.359-001	7.543-003	2.087-002	6.395-002	3.075-002	1.671-002	-1.163-004	7.398-002	3.573-002								
1.80	1.029-002	2.045-002	1.376-001	1.350-001	7.257-003	2.193-002	6.205-002	2.934-002	1.637-002	-1.360-003	7.460-002	3.217-002								
1.90	1.050-002	2.086-002	1.347-001	1.354-001	6.951-003	2.317-002	5.956-002	2.896-002	1.579-002	-2.439-003	7.426-002	2.890-002								
2.00	1.059-002	2.128-002	1.305-001	1.375-001	6.674-003	2.458-002	5.677-002	2.975-002	1.501-002	-3.299-003	7.304-002	2.613-002								
2.10	1.058-002	2.174-002	1.256-001	1.416-001	6.477-003	2.616-002	5.402-002	3.177-002	1.411-002	-3.899-003	7.109-002	2.405-002								
2.20	1.046-002	2.227-002	1.204-001	1.479-001	6.400-003	2.788-002	5.163-002	3.500-002	1.314-002	-4.214-003	6.957-002	2.283-002								
2.30	1.026-002	2.289-002	1.155-001	1.563-001	6.499-003	2.971-002	4.792-002	3.931-002	1.218-002	-4.234-003	6.571-002	2.256-002								
2.40	1.000-002	2.361-002	1.115-001	1.668-001	6.784-003	3.161-002	4.918-002	4.451-002	1.130-002	-3.971-003	6.273-002	2.332-002								
2.50	9.693-003	2.445-002	1.088-001	1.791-001	7.278-003	3.353-002	4.961-002	5.034-002	1.058-002	-3.459-003	5.986-002	2.510-002								
2.60	9.378-003	2.540-002	1.078-001	1.928-001	7.978-003	3.541-002	5.135-002	5.649-002	1.006-002	-2.723-003	5.735-002	2.785-002								
2.70	9.056-003	2.649-002	1.088-001	2.076-001	8.873-003	3.720-002	5.447-002	6.264-002	9.803-003	-1.839-003	5.540-002	3.149-002								
2.80	8.787-003	2.770-002	1.120-001	2.229-001	9.936-003	3.885-002	5.892-002	6.846-002	9.833-003	-8.643-004	5.417-002	3.585-002								
2.90	8.563-003	2.902-002	1.175-001	2.383-001	1.113-002	4.035-002	6.461-002	7.366-002	1.017-002	1.326-004	5.382-002	4.079-002								
3.00	8.315-003	3.045-002	1.252-001	2.532-001	1.242-002	4.166-002	7.138-002	7.798-002	1.080-002	1.085-003	5.442-002	4.612-002								
3.10	8.359-003	3.197-002	1.350-001	2.674-001	1.375-002	4.276-002	7.900-002	8.122-002	1.172-002	1.930-003	5.605-002	5.165-002								
3.20	8.409-003	3.356-002	1.467-001	2.803-001	1.508-002	4.366-002	8.725-002	8.322-002	1.290-002	2.609-003	5.871-002	5.720-002								
3.30	8.576-003	3.522-002	1.599-001	2.917-001	1.637-002	4.435-002	9.587-002	8.391-002	1.432-002	3.074-003	6.241-002	6.259-002								
3.40	8.872-003	3.693-002	1.746-001	3.014-001	1.757-002	4.487-002	1.046-001	8.322-002	1.592-002	3.280-003	6.710-002	6.765-002								
3.50	9.303-003	3.866-002	1.902-001	3.091-001	1.865-002	4.523-002	1.132-001	8.116-002	1.766-002	3.192-003	7.275-002	7.223-002								
3.60	9.876-003	4.040-002	2.065-001	3.147-001	1.959-002	4.545-002	1.211-001	7.777-002	1.949-002	2.783-003	7.929-002	7.618-002								
3.70	1.060-002	4.213-002	2.232-001	3.181-001	2.035-002	4.558-002	1.290-001	7.315-002	2.137-002	2.930-003	8.663-002	7.936-002								
3.80	1.147-002	4.384-002	2.399-001	3.192-001	2.092-002	4.566-002	1.357-001	6.739-002	2.322-002	9.177-004	9.469-002	8.162-002								
3.90	1.250-002	4.550-002	2.563-001	3.181-001	2.130-002	4.571-002	1.414-001	6.064-002	2.499-002	-5.607-004	1.033-001	8.285-002								
4.00	1.368-002	4.709-002	2.719-001	3.147-001	2.146-002	4.580-002	1.459-001	5.311-002	2.661-002	-2.405-003	1.125-001	8.290-002								
4.50	2.171-002	5.287-002	3.249-001	2.685-001	1.975-002	4.823-002	1.451-001	1.269-002	2.991-002	-1.622-002	1.579-001	6.183-002								
5.00	3.023-002	5.244-002	3.065-001	2.139-001	1.822-002	5.668-002	1.123-001	-3.913-004	2.004-002	-3.008-002	1.756-001	8.437-003								

k_d	ρ^0_1	ρ^0_2	ρ^0_3	ρ^0_4	ρ^0_5	ρ^0_6	ρ^0_7
0.01	4.510-012	-4.500-004	2.005-011	-2.000-003	5.513-012	-5.500-004	-8.684-012
0.05	4.813-009	-2.492-003	1.250-008	-0.993-003	3.438-009	-2.748-003	2.742-009
0.10	4.473-008	-4.649-003	1.987-007	-1.995-002	5.461-008	-5.481-003	4.485-008
0.15	2.241-007	-6.723-003	9.947-007	-2.982-002	2.732-007	-8.180-003	2.261-007
0.20	6.978-007	-8.936-003	3.095-006	-3.958-002	8.491-007	-1.085-002	7.112-007
0.30	3.366-006	-1.329-002	4.497-005	-5.860-002	4.097-006	-1.599-002	3.546-006
0.40	1.007-005	-2.758-002	1.437-005	-7.671-002	1.210-005	-2.080-002	1.097-005
0.50	2.272-005	-2.132-002	9.959-005	-5.363-002	2.702-005	-2.519-002	2.608-005
0.60	4.265-005	-2.533-002	1.858-004	-1.091-001	5.011-005	-2.905-002	5.234-005
0.70	6.994-005	-2.887-002	3.026-004	-1.220-001	8.104-005	-3.231-002	9.331-005
0.80	1.029-004	-3.213-002	4.419-004	-1.349-001	1.174-004	-3.491-002	1.523-004
0.90	1.378-004	-3.506-002	5.870-004	-1.447-001	1.549-004	-3.678-002	2.321-004
1.00	1.690-004	-3.764-002	7.142-004	-1.528-001	1.871-004	-3.784-002	3.347-004
1.10	1.887-004	-3.984-002	7.935-004	-1.576-001	2.065-004	-3.810-002	4.610-004
1.20	1.895-004	-4.163-002	7.927-004	-1.604-001	2.072-004	-3.751-002	6.106-004
1.30	1.590-004	-4.299-002	6.817-004	-1.606-001	1.825-004	-3.606-002	7.818-004
1.40	9.202-005	-4.389-002	4.376-004	-1.582-001	1.299-004	-3.374-002	9.715-004
1.50	1.889-005	-4.432-002	4.893-005	-1.531-001	5.067-005	-3.057-002	1.175-003
1.60	1.771-004	-4.423-002	-4.797-004	-1.452-001	-4.940-005	-2.657-002	1.387-003
1.70	-3.817-004	-4.363-002	-1.126-003	-1.347-001	-1.597-004	-2.177-002	1.600-003
1.80	-6.273-004	-4.249-002	-1.848-003	-1.215-001	-2.656-004	-1.625-002	1.809-003
1.90	-9.037-004	-4.080-002	-2.591-003	-1.050-001	-3.503-004	-1.008-002	2.008-003
2.00	-1.196-003	-3.857-002	-3.291-003	-0.779-002	-4.317-004	-3.365-003	2.186-003
2.10	-1.487-003	-3.580-002	-3.881-003	-0.665-002	-3.790-003	-3.790-003	2.345-003
2.20	-1.758-003	-3.252-002	-4.308-003	-4.566-002	1.125-002	2.482-003	9.796-002
2.30	-1.993-003	-2.875-002	-4.535-003	-2.217-002	-2.092-004	1.887-002	2.599-003
2.40	-2.176-003	-2.453-002	-4.557-003	2.471-003	-4.314-005	2.650-002	2.701-003
2.50	-2.302-003	-1.991-002	-4.399-003	2.788-002	1.472-004	3.400-002	2.798-003
2.60	-2.368-003	-1.495-002	-4.119-003	5.365-002	3.323-004	4.122-002	2.897-003
2.70	-2.382-003	-0.697-003	-3.644-003	7.943-002	4.763-004	4.802-002	3.018-003
2.80	-2.357-003	-4.214-003	-3.559-003	1.048-001	5.430-002	3.174-003	3.174-003
2.90	-2.313-003	1.448-003	-3.496-003	1.296-001	5.013-004	5.995-002	3.382-003
3.00	-2.271-003	7.240-003	-3.722-003	1.533-001	3.223-004	6.487-002	3.660-003
3.10	-2.255-003	1.312-002	-4.326-003	1.759-001	-8.302-000	6.901-002	4.024-003
3.20	-2.287-003	1.903-007	-5.367-003	1.970-001	-4.974-004	7.230-002	4.491-003
3.30	-2.384-003	2.500-002	-6.872-003	2.166-001	-1.133-003	7.470-002	

Table A4a
Impedance Coefficients
 $T = 0.3 \quad H = 0.1$

k_a	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7
0.01	4.526-007	1.308-004	2.248-005	3.292-003	8.289-007	1.691-004	8.634-006
0.05	1.131-005	6.537-004	5.615-004	1.646-002	2.070-005	8.448-004	2.156-004
0.10	4.516-005	1.306-003	2.240-003	3.277-002	8.246-005	1.685-003	8.595-004
0.15	1.013-004	1.954-003	5.016-003	4.888-002	1.843-004	1.923-003	1.923-003
0.20	1.794-004	2.598-003	8.840-003	6.466-002	3.247-004	3.331-003	3.392-003
0.30	3.993-004	3.864-003	1.957-002	9.482-002	7.119-004	4.903-003	7.465-003
0.40	6.990-004	5.091-003	3.390-002	1.225-001	1.220-003	6.371-003	1.286-002
0.50	1.071-003	6.270-003	5.125-002	1.471-001	1.820-003	7.711-003	1.932-002
0.60	1.507-003	7.390-003	7.090-002	1.691-001	2.476-003	8.910-003	2.650-002
0.70	1.996-003	8.446-003	9.207-002	1.653-001	3.152-003	9.962-003	3.406-002
0.80	2.529-003	9.430-003	1.139-001	1.985-001	3.811-003	1.087-002	4.166-002
0.90	3.094-003	1.034-002	1.357-001	2.077-001	4.419-003	1.165-002	4.895-002
1.00	3.679-003	1.117-002	1.566-001	2.131-001	4.947-003	1.232-002	5.561-002
1.10	4.274-003	1.192-002	1.760-001	2.151-001	5.371-003	1.292-002	6.138-002
1.20	4.866-003	1.260-002	1.931-001	2.141-001	5.676-003	1.346-002	6.602-002
1.30	5.444-003	1.319-002	2.074-001	2.108-001	5.854-003	1.399-002	6.938-002
1.40	5.996-003	1.371-002	2.186-001	2.057-001	5.907-003	1.455-002	7.137-002
1.50	6.511-003	1.417-002	2.263-001	1.996-001	5.844-003	1.517-002	7.190-002
1.60	6.976-003	1.456-002	2.305-001	1.934-001	5.696-003	1.588-002	7.139-002
1.70	7.381-003	1.490-002	2.312-001	1.879-001	5.483-003	1.671-002	6.947-002
1.80	7.717-003	1.520-002	2.288-001	1.839-001	5.246-003	1.769-002	6.676-002
1.90	7.975-003	1.547-002	2.235-001	1.823-001	5.026-003	1.880-002	6.348-002
2.00	8.150-003	1.573-002	2.162-001	1.835-001	4.867-003	2.006-002	6.001-002
2.10	8.241-003	1.599-002	2.077-001	1.862-001	4.812-003	2.145-002	5.676-002
2.20	8.249-003	1.628-002	1.987-001	1.965-001	4.894-003	2.292-002	5.414-002
2.30	8.182-003	1.662-002	1.903-001	2.084-001	5.139-003	2.445-002	5.253-002
2.40	8.050-003	1.701-002	1.834-001	2.237-001	5.561-003	2.599-002	5.221-002
2.50	7.864-003	1.747-002	1.788-001	2.420-001	6.157-003	2.749-002	5.340-002
2.60	7.642-003	1.801-002	1.771-001	2.626-001	6.913-003	2.891-002	5.618-002
2.70	7.400-003	1.864-002	1.787-001	2.868-001	7.803-003	3.020-002	6.055-002
2.80	7.156-003	1.936-002	1.840-001	3.077-001	8.793-003	3.135-002	6.639-002
2.90	6.924-003	2.017-002	1.928-001	3.306-001	9.843-003	3.233-002	7.349-002
3.00	6.721-003	2.106-002	2.052-001	3.527-001	1.091-002	3.314-002	8.161-002
3.10	6.560-003	2.204-002	2.209-001	3.734-001	1.196-002	3.378-002	9.046-002
3.20	6.452-003	2.308-002	2.394-001	3.922-001	1.295-002	3.426-002	9.973-002
3.30	6.409-003	2.419-002	2.604-001	4.086-001	1.385-002	3.461-002	1.001-001
3.40	6.440-003	2.536-002	2.835-001	4.222-001	1.463-002	3.484-002	1.001-001
3.50	6.554-003	2.658-002	3.081-001	4.328-001	1.529-002	3.499-002	1.271-001
3.60	6.760-003	2.784-002	3.339-001	4.402-001	1.579-002	3.509-002	1.351-001
3.70	7.065-003	2.912-002	3.602-001	4.442-001	1.613-002	3.517-002	1.422-001
3.80	7.479-003	3.043-002	3.866-001	4.446-001	1.632-002	3.527-002	1.480-001
3.90	8.010-003	3.174-002	4.125-001	4.416-001	1.636-002	3.542-002	1.526-001
4.00	8.666-003	3.304-002	4.375-001	4.349-001	1.626-002	3.566-002	1.555-001
4.50	1.395-002	3.858-002	5.246-001	3.547-001	1.461-002	3.920-002	1.484-001
5.00	2.116-002	3.909-002	4.991-001	2.577-001	1.541-002	4.695-002	1.040-001

Table A4b
Pressure Coefficients
 $T = 0.3 \quad H = 0.1$

k_u	ρ_1^0	ρ_2^1	ρ_3^1	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^0	ρ_2^0	ρ_3^0
-0.01	-3.997-012	-4.250-004	4.516-011	-3.000-003	8.635-012	-5.750-004	-6.080-012	-4.250-004	4.496-011
-0.05	3.991-009	-2.124-003	2.816-008	-1.999-002	5.371-009	-2.872-003	3.914-009	-2.125-003	2.808-008
-0.10	6.366-008	-4.243-003	4.476-007	-2.992-002	8.754-008	-2.728-003	6.350-008	-2.993-002	4.480-007
-0.15	3.180-007	-6.352-003	2.241-006	-4.473-002	4.289-007	-8.551-003	3.202-007	-6.373-003	2.257-006
-0.20	9.910-007	-8.446-003	6.974-006	-5.936-002	1.333-006	-1.133-002	1.007-006	-8.493-003	7.088-006
-0.30	4.816-006	-1.257-002	3.307-002	-6.785-002	6.430-006	-1.666-002	5.023-006	-1.273-002	3.522-005
-0.40	4.436-005	-1.658-002	1.002-004	-1.149-001	1.898-005	-2.162-002	1.555-005	-1.695-002	1.085-004
-0.50	3.251-005	-2.043-002	2.253-004	-1.402-001	4.240-005	-2.609-002	3.698-005	-2.116-002	2.562-004
-0.60	6.131-005	-2.411-002	4.215-004	-1.833-001	7.865-006	-2.997-002	7.428-006	-2.953-002	5.104-004
-0.70	1.012-004	-2.757-002	6.891-002	-1.639-001	1.275-004	-3.317-002	1.326-004	-2.535-002	9.621-004
-0.80	1.501-004	-3.079-002	1.012-003	-2.016-001	1.854-004	-3.561-002	2.168-004	-3.368-002	1.458-003
-0.90	2.035-004	-3.376-002	1.357-003	-2.162-001	2.458-004	-3.723-002	3.311-004	-3.783-002	2.198-003
-1.00	2.536-004	-3.684-002	1.679-003	-2.275-001	3.000-004	-3.798-002	4.787-004	-4.197-002	3.131-003
-1.10	2.904-004	-3.881-002	1.899-003	-2.353-001	3.376-004	-3.782-002	6.613-004	-4.612-002	4.256-003
-1.20	3.016-004	-4.086-002	1.966-003	-2.393-001	3.489-004	-3.673-002	8.789-004	-5.026-002	5.557-003
-1.30	2.743-004	-4.255-002	1.809-003	-2.395-001	3.266-004	-3.469-002	1.130-003	-5.443-002	7.006-003
-1.40	1.961-004	-4.386-002	1.380-003	-2.357-001	2.677-004	-3.171-002	1.410-003	-5.861-002	8.562-003
-1.50	5.657-005	-4.768-002	6.518-004	-2.279-001	1.751-004	-2.780-002	7.173-003	-6.281-002	4.398-001
-1.60	-1.507-004	-4.523-002	-3.677-004	-2.159-001	5.882-005	-2.301-002	2.031-003	-6.704-002	1.179-002
-1.70	-4.268-004	-4.523-002	-1.634-003	-1.999-001	-6.475-005	-1.739-002	2.354-003	-7.130-002	1.335-002
-1.80	-7.663-004	-4.475-002	-3.063-003	-1.799-001	-1.102-002	-1.102-002	2.671-003	-7.559-002	1.480-002
-1.90	-1.157-003	-4.376-002	-4.543-003	-1.561-001	-2.452-004	-4.014-003	2.972-003	-7.990-002	1.612-002
-2.00	-1.580-003	-4.225-002	-5.942-003	-1.287-001	-2.563-004	-3.109-003	3.246-003	-8.422-002	1.727-002
-2.10	-0.812-003	-4.021-002	-7.130-003	-0.810-002	-1.920-004	1.539-002	3.486-003	-8.854-002	1.828-002
-2.20	-2.425-003	-3.766-002	-8.000-003	-6.482-002	-4.747-005	1.948-002	3.688-003	-9.284-002	1.920-002
-2.30	-2.796-003	-3.463-002	-8.489-003	-2.938-002	1.683-004	2.758-002	3.850-003	-9.711-002	2.009-002
-2.40	-3.103-003	-3.113-002	-8.593-003	7.641-003	4.317-004	3.553-002	3.980-003	-1.013-001	2.104-002
-2.50	-3.331-003	-2.772-002	-8.374-003	4.561-002	7.059-004	3.434-002	4.085-003	-1.055-001	2.229-002
-2.60	-3.475-003	-2.294-002	-7.957-003	8.390-002	9.450-004	5.027-002	4.181-003	-1.096-001	2.387-002
-2.70	-3.541-003	-1.835-002	-7.517-003	1.219-001	1.099-003	5.677-002	4.287-003	-1.135-001	2.598-002
-2.80	-3.541-003	-1.351-002	-7.254-003	1.592-001	1.121-003	6.252-002	4.423-003	-1.174-001	2.875-002
-2.90	-3.496-003	-8.444-003	-7.375-003	1.952-001	9.730-004	6.744-002	4.611-003	-1.212-001	3.232-002
-3.00	-3.432-003	-3.212-003	-8.066-003	2.296-001	6.282-004	7.143-002	4.876-003	-1.248-001	3.680-002
-3.10	-3.375-003	-2.155-003	-9.471-002	2.620-001	7.773-005	7.446-002	5.241-003	-1.284-001	4.228-002
-3.20	-3.351-003	7.631-003	-1.168-002	2.922-001	-6.710-004	7.648-002	5.728-003	-1.318-001	4.882-002
-3.30	-3.384-003	1.319-002	-1.471-002	3.200-001	-1.594-003	7.746-002	6.359-003	-1.352-001	5.647-002
-3.40	-3.488-003	1.883-002	-1.852-002	3.451-001	-2.652-003	7.739-002	7.156-003	-1.386-001	6.523-002
-3.50	-3.673-003	2.452-002	-2.298-002	3.676-001	-3.794-003	7.624-002	8.140-003	-1.418-001	7.511-002
-3.60	-3.938-003	3.027-002	-2.791-002	3.871-001	-4.963-003	7.401-002	9.328-003	-1.451-001	8.607-002
-3.70	-4.272-003	3.607-002	-3.306-002	4.036-001	-6.097-003	7.070-002	1.074-002	-1.484-001	9.805-002
-3.80	-4.653-003	4.191-002	-3.813-002	4.169-001	-7.134-003	6.631-002	1.239-002	-1.517-001	1.110-001
-3.90	-5.049-003	4.778-002	-4.281-002	4.268-001	-8.021-003	6.084-002	1.429-002	-1.551-001	1.247-001
-4.00	-5.414-003	5.365-002	-4.674-002	4.332-001	-8.713-003	5.429-002	1.645-002	-1.586-001	1.391-001
-4.10	-5.618-003	8.175-002	-4.461-002	4.016-001	-9.031-003	6.658-002	3.057-002	-1.803-001	1.740-000
-4.20	-4.956-003	9.681-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.30	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.40	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.50	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.60	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.70	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.80	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-4.90	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001
-5.00	-4.961-003	4.961-002	-5.221-002	2.398-001	-8.960-003	-5.557-002	4.394-002	-2.130-001	2.107-001

Table A5a
Impedance Coefficients
 $T = 0.5 \quad H = 0.1$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	2.332-007	7.683-005	4.168-005	5.489-003	6.511-007	1.251-004
0.05	5.828-006	3.840-004	1.041-003	2.741-002	1.625-005	6.247-004
0.10	2.328-005	7.673-004	4.151-003	5.461-003	6.471-005	1.245-003
0.15	5.226-005	1.149-003	9.293-003	8.138-002	1.485-004	1.858-003
0.20	9.261-005	1.529-003	1.640-002	1.075-001	2.540-004	2.458-003
0.30	2.065-004	2.278-003	3.618-002	1.571-001	5.541-004	3.607-003
0.40	3.626-004	4.011-003	6.256-002	2.021-001	9.432-004	4.670-003
0.50	5.579-004	3.721-003	9.436-002	2.412-001	1.394-003	5.628-003
0.60	7.890-004	4.406-003	1.302-001	2.738-001	1.876-003	6.473-003
0.70	1.052-003	5.062-003	1.687-001	2.991-001	2.358-003	7.204-003
0.80	1.344-003	5.686-003	2.682-001	3.172-001	2.810-003	7.831-003
0.90	1.659-003	6.276-003	2.474-001	3.281-001	3.207-003	8.369-003
1.00	1.996-003	6.829-003	2.849-001	3.322-001	3.526-003	8.840-003
1.10	2.349-003	7.343-003	3.194-001	3.301-001	3.755-003	9.271-003
1.20	2.714-003	7.817-003	3.497-001	3.227-001	3.887-003	9.692-003
1.30	3.088-003	8.248-003	3.750-001	3.110-001	3.924-003	1.013-002
1.40	3.463-003	8.635-003	3.945-001	2.962-001	3.875-003	1.063-002
1.50	3.835-003	8.977-003	4.076-001	2.798-001	3.760-003	1.120-002
1.60	4.196-003	9.273-003	4.143-001	2.632-001	3.606-003	1.186-002
1.70	4.538-003	9.524-003	4.147-001	2.479-001	3.444-003	1.264-002
1.80	4.854-003	9.733-003	4.092-001	2.356-001	3.313-003	1.353-002
1.90	5.135-003	9.905-003	3.988-001	2.276-001	3.247-003	1.453-002
2.00	5.374-003	1.005-002	3.848-001	2.250-001	3.282-003	1.561-002
2.10	5.564-003	1.016-002	3.687-001	2.287-001	3.443-003	1.675-002
2.20	5.702-003	1.027-002	3.522-001	2.390-001	3.745-003	1.789-002
2.30	5.786-003	1.038-002	3.371-001	2.557-001	4.190-003	1.901-002
2.40	5.817-003	1.049-002	3.250-001	2.783-001	4.766-003	2.066-002
2.50	5.799-003	1.063-002	3.172-001	3.058-001	5.449-003	2.101-002
2.60	5.738-003	1.080-002	3.148-001	3.368-001	6.208-003	2.183-002
2.70	5.643-003	1.101-002	3.183-001	3.701-001	7.004-003	2.251-002
2.80	5.520-003	1.126-002	3.280-001	4.042-001	7.799-003	2.304-002
2.90	5.378-003	1.155-002	3.437-001	4.378-001	8.558-003	2.344-002
3.00	5.227-003	1.190-002	3.653-001	4.698-001	9.247-003	2.371-002
3.10	5.072-003	1.229-002	3.920-001	4.990-001	9.843-003	2.389-002
3.20	4.921-003	1.272-002	4.234-001	5.247-001	1.033-002	2.400-002
3.30	4.781-003	1.320-002	4.586-001	5.462-001	1.069-002	2.407-002
3.40	4.657-003	1.373-002	4.970-001	5.629-001	1.092-002	2.414-002
3.50	4.555-003	1.430-002	5.377-001	5.744-001	1.102-002	2.422-002
3.60	4.481-003	1.491-002	5.799-001	5.804-001	1.102-002	2.436-002
3.70	4.441-003	1.556-002	6.228-001	5.805-001	1.091-002	2.458-002
3.80	4.441-003	1.624-002	6.654-001	5.747-001	1.072-002	2.490-002
3.90	4.487-003	1.696-002	7.067-001	5.628-001	1.048-002	2.535-002
4.00	4.586-003	1.770-002	7.457-001	5.451-001	1.022-002	2.593-002
4.50	6.042-003	2.151-002	8.680-001	3.883-001	9.948-003	3.074-002
5.00	9.039-003	2.446-002	8.214-001	2.340-001	1.336-002	3.572-002

Table A5b
Pressure Coefficients
 $T = 0.5 \quad H = 0.1$

k_a	$p_1^{(0)}$	$p_2^{(0)}$	$p_3^{(0)}$	$p_1^{(0)}$	$p_2^{(0)}$	$p_3^{(0)}$
0.01	9.403-012	-3.750-004	1.250-010	-5.000-003	1.250-010	-5.000-003
0.05	5.855-009	-1.870-003	7.818-008	-2.498-002	9.770-009	-3.121-003
0.10	9.329-008	-3.745-003	1.242-006	-4.986-002	1.551-007	-6.222-003
0.15	4.676-007	-5.609-003	6.219-006	-7.452-002	7.555-007	-9.280-002
0.20	1.457-006	-7.463-003	1.935-005	-9.686-002	2.408-006	-1.227-002
0.30	7.087-006	-1.113-002	9.358-005	-1.462-001	1.158-005	-1.799-002
0.40	2.117-005	-1.471-002	2.774-004	-1.911-001	3.407-005	-2.323-002
0.50	4.800-005	-1.819-002	6.231-004	-2.328-001	7.579-005	-2.784-002
0.60	9.082-005	-2.150-002	1.165-003	-2.707-001	1.401-004	-3.170-002
0.70	1.505-004	-2.479-002	1.906-003	-3.043-001	2.259-004	-3.471-002
0.80	2.249-004	-2.787-002	2.805-003	-3.331-001	3.272-004	-3.678-002
0.90	3.076-004	-3.080-002	3.776-003	-3.567-001	4.331-004	-3.785-002
1.00	3.883-004	-3.355-002	4.691-003	-3.747-001	5.290-004	-3.786-002
1.10	4.528-004	-3.613-002	5.393-003	-3.867-001	5.995-004	-3.678-002
1.20	4.839-004	-3.850-002	5.714-003	-3.926-001	6.307-004	-3.459-002
1.30	4.625-004	-4.065-002	5.496-003	-3.921-001	6.142-004	-3.130-002
1.40	3.696-004	-4.255-002	4.621-003	-3.849-001	5.499-004	-2.692-002
1.50	1.887-004	-4.418-002	3.032-003	-3.709-001	4.477-004	-2.151-002
1.60	-5.218-005	-4.550-002	7.559-004	-3.499-001	3.285-004	-1.514-002
1.70	-4.773-004	-4.646-002	-2.089-003	-3.221-001	2.217-004	-7.917-003
1.80	-9.616-004	-4.704-002	-5.295-003	-2.876-001	1.620-004	-2.882-005
1.90	-1.530-003	-4.719-002	-8.590-002	-2.467-001	1.823-004	8.522-003
2.00	-2.156-003	-4.689-002	-1.167-002	-2.000-001	1.736-002	7.736-002
2.10	-2.805-003	-4.612-002	-1.426-002	-1.482-001	5.439-004	2.632-002
2.20	-3.441-003	-4.481-002	-1.615-002	-9.228-002	8.810-004	3.517-002
2.30	-4.025-003	-4.315-002	-1.725-002	-3.322-002	1.284-003	4.368-002
2.40	-4.523-003	-4.100-002	-1.761-002	-2.783-002	1.698-003	5.162-002
2.50	-4.911-003	-3.845-002	-1.743-002	8.975-002	2.059-003	5.879-002
2.60	-5.179-003	-3.553-002	-1.699-002	1.515-001	2.298-003	6.504-002
2.70	-5.325-003	-3.231-002	-1.668-002	2.121-001	2.555-003	7.023-002
2.80	-5.361-003	-2.881-002	-1.688-002	2.708-001	2.185-003	7.427-002
2.90	-5.308-003	-2.509-002	-1.793-002	3.269-001	1.763-003	7.709-002
3.00	-5.190-003	-2.117-002	-2.010-002	3.799-001	1.090-003	7.865-002
3.10	-5.035-003	-1.707-002	-2.354-002	4.294-001	1.886-004	7.892-002
3.20	-4.870-003	-1.282-002	-2.830-002	4.750-001	-8.990-004	7.791-002
3.30	-4.720-003	-8.422-003	-3.428-002	5.164-001	-2.115-003	7.561-002
3.40	-4.603-003	-3.681-003	-4.127-002	5.534-001	-3.393-003	7.203-002
3.50	-4.531-003	8.004-004	-4.895-002	5.958-001	-4.664-003	6.720-002
3.60	-4.508-003	5.624-003	-5.693-002	6.133-001	-5.860-003	6.114-002
3.70	-4.529-003	1.059-002	-6.474-002	6.356-001	-6.925-003	5.389-002
3.80	-4.582-003	1.570-002	-7.190-002	6.523-001	-7.815-003	4.552-002
3.90	-4.647-003	2.094-002	-7.792-002	6.632-001	-8.503-003	3.609-002
4.00	-4.695-003	2.630-002	-8.238-002	6.679-001	-8.984-003	2.569-002
4.10	-4.736-003	3.166-002	-7.336-002	5.844-001	-9.222-003	3.529-002
4.20	-4.765-003	3.654-002	-2.832-002	3.197-001	-8.596-003	-8.969-002
4.30	-4.784-003	4.097-002	-2.283-001	2.951-001	-1.581+000	-1.581+000
4.40	-4.794-003	4.500-002	-1.618+000	2.865-001	-1.618+000	-1.618+000
4.50	-4.797-003	4.864-002	-9.558-001	3.204-001	-1.658+000	-1.658+000
4.60	-4.793-003	5.190-002	-2.454-001	3.323-002	-2.454-001	-2.454-001
4.70	-4.780-003	5.480-002	-3.275-001	3.448-002	-3.275-001	-3.275-001
4.80	-4.759-003	5.733-002	-4.097-001	3.556-002	-4.097-001	-4.097-001
4.90	-4.733-003	5.951-002	-4.864-001	3.657-002	-4.864-001	-4.864-001
5.00	-4.694-003	6.133-002	-5.686-001	3.750-002	-5.686-001	-5.686-001

Table A6a
Impedance Coefficients
 $T = 0.05 \quad H = 0.2$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7
0.01	3.789-006	8.696-004	9.995-007	1.840-004	4.215-006	8.182-004	4.105-006
0.05	9.464-005	4.341-003	2.497-005	9.190-004	1.053-004	4.087-003	1.025-004
0.10	3.778-004	8.665-003	9.961-005	1.833-004	4.197-004	8.152-004	4.090-004
0.15	8.476-004	1.296-002	2.232-004	2.738-003	9.394-004	1.217-002	9.158-004
0.20	1.500-003	1.721-002	3.944-004	3.628-003	1.658-003	1.613-002	1.617-003
0.30	3.332-003	2.551-002	8.722-004	5.748-003	3.652-003	2.376-002	3.570-003
0.40	5.819-003	3.345-002	1.514-003	6.960-003	6.304-003	3.090-002	6.179-003
0.50	8.888-003	4.095-002	2.294-003	8.436-003	3.742-002	9.328-003	2.313-002
0.60	1.245-002	4.791-002	3.181-003	9.754-003	1.304-002	1.288-002	2.618-002
0.70	1.640-002	5.427-002	4.142-003	1.090-002	1.680-002	4.833-002	1.668-002
0.80	2.064-002	5.999-002	5.140-003	1.186-002	2.059-002	5.266-002	2.057-002
0.90	2.504-002	6.503-002	6.139-003	1.264-002	2.425-002	5.626-002	2.440-002
1.00	2.949-002	6.940-002	7.102-003	1.325-002	2.760-002	5.921-002	2.799-002
1.10	3.387-002	7.310-002	7.995-003	1.369-002	3.052-002	6.160-002	3.122-002
1.20	3.806-002	7.616-002	8.788-003	1.400-002	3.288-002	6.358-002	3.397-002
1.30	4.196-002	7.863-002	9.455-003	1.419-002	3.461-002	6.530-002	3.613-002
1.40	4.545-002	8.059-002	9.974-003	1.429-002	3.566-002	6.693-002	3.764-002
1.50	4.845-002	8.212-002	1.033-002	1.435-002	3.603-002	6.868-002	3.847-002
1.60	5.088-002	8.334-002	1.052-002	1.440-002	3.577-002	7.071-002	3.863-002
1.70	5.267-002	8.437-002	1.055-002	1.449-002	3.497-002	7.321-002	3.816-002
1.80	5.381-002	8.534-002	1.043-002	1.464-002	3.377-002	7.633-002	3.716-002
1.90	5.428-002	8.642-002	1.017-002	1.490-002	3.235-002	8.017-002	3.576-002
2.00	5.412-002	8.776-002	9.821-003	1.530-002	3.091-002	8.479-002	3.412-002
2.10	5.339-002	8.949-002	9.408-003	1.586-002	2.968-002	9.020-002	3.244-002
2.20	5.219-002	9.174-002	8.977-003	1.660-002	2.887-002	9.634-002	3.091-002
2.30	5.064-002	9.463-002	8.574-003	1.751-002	2.868-002	1.031-001	2.973-002
2.40	4.889-002	9.822-002	8.241-003	1.858-002	2.926-002	1.103-001	2.908-002
2.50	4.710-002	1.026-001	8.017-003	1.979-002	3.071-002	1.177-001	2.909-002
2.60	4.543-002	1.076-001	7.935-003	2.111-002	3.309-002	1.252-001	2.986-002
2.70	4.403-002	1.134-001	8.015-003	2.251-002	3.637-002	1.355-001	3.143-002
2.80	4.303-002	1.199-001	8.271-003	2.394-002	4.048-002	1.393-001	3.381-002
2.90	4.254-002	1.269-001	8.704-003	2.537-002	4.531-002	1.456-001	3.694-002
3.00	4.267-002	1.343-001	9.311-003	2.676-002	5.071-002	1.512-001	4.075-002
3.10	4.347-002	1.422-001	1.008-002	2.809-002	5.650-002	1.559-001	4.512-002
3.20	4.501-002	1.503-001	1.099-002	2.931-002	6.250-002	1.598-001	4.993-002
3.30	4.731-002	1.585-001	1.202-002	3.041-002	6.854-002	1.629-001	5.505-002
3.40	5.040-002	1.668-001	1.316-002	3.137-002	7.445-002	1.650-001	6.033-002
3.50	5.430-002	1.751-001	1.437-002	3.218-002	8.006-002	1.664-001	6.564-002
3.60	5.903-002	1.833-001	1.563-002	3.282-002	8.522-002	1.670-001	7.085-002
3.70	6.460-002	1.912-001	1.693-002	3.328-002	8.979-002	1.670-001	7.581-002
3.80	7.103-002	1.987-001	1.822-002	3.357-002	9.365-002	1.665-001	8.041-002
3.90	7.832-002	2.058-001	1.950-002	3.367-002	9.670-002	1.650-001	8.449-002
4.00	8.645-002	2.122-001	2.072-002	3.350-002	9.883-002	1.644-001	8.794-002
4.50	1.374-001	2.276-001	2.475-002	3.052-002	9.449-002	1.632-001	9.101-002
5.00	1.764-001	2.605-001	2.203-002	2.672-002	8.028-002	1.919-001	6.869-002

Table A6b
Pressure Coefficients
 $T = 0.05 \quad H = 0.2$

k_d	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
0.01	5.203-012	-9.750-004	2.668-012	-5.000-004	5.470-012	-1.025-003
0.05	3.242-009	-4.873-003	1.662-009	-2.498-003	3.407-009	-5.121-003
0.10	5.136-008	-9.732-003	2.632-008	-4.987-003	5.394-008	-1.022-002
0.15	2.557-007	-1.456-002	1.310-007	-7.458-003	2.683-007	-1.527-002
0.20	7.894-007	-1.933-002	4.041-007	-9.900-003	8.271-007	-2.024-002
0.30	3.730-006	-2.876-002	1.905-006	-1.466-002	3.893-006	-2.989-002
0.40	1.066-005	-3.784-002	5.428-006	-1.921-002	1.106-005	-3.898-002
0.50	2.265-005	-4.651-002	1.149-005	-2.347-002	2.334-005	-4.734-002
0.60	3.896-005	-5.466-002	1.969-005	-2.738-002	3.985-005	-5.482-002
0.70	5.600-005	-6.222-002	2.818-005	-3.088-002	5.687-005	-6.126-002
0.80	6.653-005	-6.909-002	3.341-005	-3.392-002	6.736-005	-6.655-002
0.90	5.940-005	-7.521-002	3.002-005	-3.645-002	6.109-005	-7.056-002
1.00	1.979-005	-8.049-002	1.118-005	-3.844-002	2.556-005	-7.321-002
1.10	-6.983-005	-8.488-002	-3.077-005	-3.983-002	-5.246-005	-7.440-002
1.20	-2.281-004	-8.831-002	-1.034-004	-4.061-002	-1.846-004	-7.407-002
1.30	-4.725-004	-9.071-002	-2.127-004	-4.073-002	-3.781-004	-7.217-002
1.40	-8.166-004	-9.202-002	-3.623-004	-4.018-002	-6.333-004	-6.968-002
1.50	-1.268-003	-9.219-002	-5.513-004	-3.894-002	-9.410-004	-6.358-002
1.60	-1.323-003	-9.117-002	-7.741-004	-3.700-002	-1.581-003	-5.690-002
1.70	-2.469-003	-8.890-002	-1.019-003	-3.436-002	-1.623-003	-4.869-002
1.80	-3.179-003	-8.537-002	-1.270-003	-3.104-002	-1.926-003	-3.902-002
1.90	-3.915-003	-8.057-002	-1.505-003	-2.706-002	-2.144-003	-2.803-002
2.00	-4.671-003	-7.451-002	-1.701-003	-2.234-002	-2.586-003	-1.586-002
2.10	-5.274-003	-6.724-002	-1.837-003	-1.732-002	-2.156-003	-2.723-003
2.20	-5.795-003	-5.881-002	-1.892-003	-1.169-002	-1.888-003	1.116-002
2.30	-6.151-003	-4.933-002	-1.858-003	-5.673-003	-1.428-003	2.553-002
2.40	-6.312-003	-3.891-002	-1.731-003	-6.428-004	-7.987-004	4.011-002
2.50	-6.271-003	-2.770-002	-1.522-003	-7.152-003	-4.701-005	5.465-002
2.60	-6.038-003	-1.583-002	-1.252-003	-1.375-002	7.588-004	6.886-002
2.70	-5.646-003	-3.455-003	-9.496-004	2.035-002	1.536-003	8.251-002
2.80	-5.143-003	9.292-003	-6.498-004	2.684-002	2.196-003	9.538-002
2.90	-4.591-003	2.228-002	-3.896-004	3.316-002	2.856-003	1.073-001
3.00	-4.050-003	3.541-002	-2.839-004	3.924-002	2.844-003	1.181-001
3.10	-3.607-003	4.858-002	-1.216-004	4.502-002	2.711-003	1.276-001
3.20	-3.295-003	6.173-002	-1.630-004	5.046-002	2.233-003	1.357-001
3.30	-3.166-003	7.479-002	-3.375-004	5.551-002	1.416-003	1.424-001
3.40	-3.242-003	8.773-002	-6.420-004	6.016-002	2.923-004	1.476-001
3.50	-3.523-003	1.005-001	-1.060-003	6.436-002	-1.075-003	1.512-001
3.60	-3.983-003	1.131-001	-1.564-003	6.811-002	-2.599-003	1.531-001
3.70	-4.566-003	1.256-001	-2.111-003	7.137-002	-4.175-003	1.533-001
3.80	-5.184-003	1.378-001	-2.649-003	7.431-002	-5.684-003	1.517-001
3.90	-5.718-003	1.497-001	-3.116-003	7.631-002	-7.003-003	1.481-001
4.00	-6.015-003	1.614-001	-3.443-003	7.792-002	-8.016-003	1.427-001
4.50	3.129-003	2.100-001	-7.228-004	7.468-002	-6.574-003	8.148-002
5.00	4.024-002	2.118-001	8.219-003	4.415-002	-7.629-003	-3.722-002

Table A7a
Impedance Coefficients
 $T = 0.1 \quad H = 0.2$

$k\omega$	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9	Z_{10}	Z_{11}	Z_{12}	Z_{13}
0.01	2.998-006	7.112-004	3.333-006	5.637-004	3.682-006	7.036-004	7.007-006	8.450-004	6.645-006	6.886-004	6.322-006	8.565-004	
0.05	7.490-005	3.554-003	8.325-005	2.816-003	9.196-005	3.515-003	1.750-004	4.219-003	1.660-004	3.638-003	1.579-004	4.278-003	
0.10	2.991-004	7.097-003	3.321-004	5.615-003	3.666-004	7.009-003	6.979-004	8.401-003	6.622-004	6.843-003	6.303-004	8.528-003	
0.15	6.709-004	1.062-002	7.460-004	8.382-003	8.202-004	1.046-002	1.562-003	1.251-002	1.484-003	1.018-002	1.413-003	1.272-002	
0.20	1.188-003	1.410-002	1.314-003	1.110-002	1.447-003	1.386-002	2.758-003	1.651-002	2.621-003	1.343-002	2.499-003	1.683-002	
0.30	2.640-003	2.092-002	2.905-003	1.633-002	3.182-003	2.040-002	6.081-003	2.406-002	5.796-003	1.950-002	5.539-003	2.469-002	
0.40	4.615-003	2.746-002	5.039-003	2.121-002	5.479-003	2.649-002	1.051-002	3.079-002	1.006-002	2.985-002	9.844-003	3.191-002	
0.50	7.057-003	3.367-002	7.629-003	2.562-002	8.220-003	3.205-002	1.584-002	3.651-002	1.523-002	2.927-002	1.467-002	3.833-002	
0.60	9.903-003	3.946-002	1.057-002	2.951-002	1.126-002	3.698-002	2.182-002	4.108-002	2.112-002	3.262-002	2.046-002	4.379-002	
0.70	1.308-002	4.480-002	1.375-002	3.282-002	1.445-002	4.127-002	2.819-002	4.440-002	2.749-002	3.480-002	2.682-002	4.820-002	
0.80	1.650-002	4.965-002	1.705-002	3.553-002	1.764-002	4.490-002	3.468-002	4.645-002	3.410-002	3.574-002	3.354-002	5.150-002	
0.90	2.009-002	5.398-002	2.035-002	3.764-002	2.067-002	4.792-002	4.101-002	4.724-002	4.072-002	3.543-002	4.043-002	5.364-002	
1.00	2.376-002	5.777-002	2.353-002	3.917-002	2.341-002	5.039-002	4.691-002	4.688-002	4.709-002	3.392-002	4.727-002	5.463-002	
1.10	2.743-002	6.104-002	2.648-002	4.016-002	2.574-002	5.242-002	5.216-002	4.550-002	5.299-002	3.127-002	5.386-002	5.452-002	
1.20	3.100-002	6.378-002	2.909-002	4.069-002	2.756-002	5.413-002	5.655-002	4.328-002	5.820-002	2.761-002	6.001-002	5.336-002	
1.30	3.439-002	6.604-002	3.129-002	4.083-002	2.881-002	5.567-002	5.992-002	4.846-002	6.253-002	2.310-002	6.552-002	5.128-002	
1.40	3.752-002	6.784-002	3.300-002	4.069-002	2.947-002	5.719-002	6.216-002	3.730-002	6.582-002	1.795-002	7.024-002	4.841-002	
1.50	4.030-002	6.924-002	3.417-002	4.039-002	2.954-002	5.868-002	6.322-002	3.409-002	6.796-002	1.239-002	7.401-002	4.493-002	
1.60	4.266-002	7.031-002	3.477-002	4.005-002	2.910-002	6.089-002	6.312-002	3.114-002	6.886-002	6.692-003	7.673-002	4.104-002	
1.70	4.453-002	7.114-002	3.482-002	3.981-002	2.822-002	6.337-002	6.196-002	2.874-002	6.853-002	1.142-002	7.832-002	3.698-002	
1.80	4.587-002	7.184-002	3.436-002	3.981-002	2.707-002	6.645-002	5.992-002	2.717-002	6.702-002	-3.963-003	7.876-002	3.301-002	
1.90	4.665-002	7.252-002	3.344-002	4.018-002	2.581-002	7.020-002	5.724-002	2.666-002	6.446-002	-8.342-003	7.810-002	2.939-002	
2.00	4.687-002	7.312-002	3.219-002	4.101-002	2.465-002	7.468-002	5.422-002	2.736-002	6.106-002	-1.174-002	7.643-002	2.637-002	
2.10	4.656-002	7.436-002	3.072-002	4.239-002	2.378-002	7.984-002	5.122-002	2.936-002	5.710-002	-1.397-002	7.392-002	2.421-002	
2.20	4.577-002	7.577-002	2.920-002	4.436-002	2.342-002	8.559-002	4.860-002	3.262-002	5.290-002	-1.491-002	7.080-002	2.307-002	
2.30	4.460-002	7.766-002	2.777-002	4.692-002	2.371-002	9.181-002	4.671-002	3.701-002	4.880-002	-1.453-002	6.734-002	2.308-002	
2.40	4.316-002	8.010-002	2.659-002	5.002-002	2.478-002	9.829-002	4.584-002	4.231-002	4.516-002	-1.291-002	6.383-002	2.430-002	
2.50	4.159-002	8.315-002	2.579-002	5.359-002	2.667-002	1.048-001	4.620-002	4.822-002	4.227-002	-1.020-002	6.056-002	2.669-002	
2.60	4.000-002	8.683-002	2.546-002	5.752-002	2.939-002	1.112-001	4.792-002	5.441-002	4.079-002	-6.622-003	5.779-002	3.018-002	
2.70	3.854-002	9.113-002	2.567-002	6.167-002	3.286-002	1.173-001	5.101-002	6.053-002	3.969-002	-2.463-003	5.575-002	3.459-002	
2.80	3.731-002	9.602-002	2.645-002	6.593-002	3.697-002	1.228-001	5.542-002	6.627-002	4.027-002	1.984-003	5.461-002	3.975-002	
2.90	3.642-002	1.014-001	2.779-002	7.016-002	4.157-002	1.277-001	6.102-002	7.133-002	4.216-002	6.423-003	5.448-002	4.546-002	
3.00	3.594-002	1.073-001	2.968-002	7.425-002	4.651-002	1.319-001	6.761-002	7.553-002	4.532-002	1.057-002	5.544-002	5.149-002	
3.10	3.595-002	1.136-001	3.205-002	7.811-002	5.163-002	1.354-001	7.498-002	7.865-002	4.966-002	1.419-002	5.751-002	5.766-002	
3.20	3.650-002	1.202-001	3.486-002	8.166-002	5.675-002	1.381-001	8.291-002	8.061-002	5.505-002	1.707-002	6.068-002	6.378-002	
3.30	3.763-002	1.271-001	3.803-002	8.483-002	6.173-002	1.401-001	9.117-002	8.132-002	6.136-002	1.901-002	6.493-002	6.969-002	
3.40	3.937-002	1.342-001	4.150-002	8.760-002	6.644-002	1.414-001	9.953-002	8.078-002	6.843-002	1.988-002	7.022-002	7.524-002	
3.50	4.176-002	1.415-001	4.521-002	8.991-002	7.077-002	1.422-001	1.078-001	7.898-002	7.609-002	1.954-002	7.650-002	8.029-002	
3.60	4.485-002	1.488-001	4.908-002	9.174-002	7.461-002	1.425-001	1.158-001	7.595-002	8.418-002	1.789-002	8.374-002	8.472-002	
3.70	4.868-002	1.561-001	5.307-002	9.307-002	7.788-002	1.424-001	1.232-001	7.174-002	9.250-002	1.481-002	9.188-002	8.839-002	
3.80	5.331-002	1.634-001	5.711-002	9.386-002	8.050-002	1.420-001	1.300-001	6.642-002	1.009-001	1.020-002	1.009-001	9.117-002	
3.90	5.879-002	1.705-001	6.113-002	9.411-002	8.242-002	1.415-001	1.359-001	6.006-002	1.090-001	3.969-003	1.107-001	9.288-002	
4.00	6.519-002	1.773-001	6.505-002	9.378-002	8.358-002	1.409-001	1.408-001	5.277-002	1.168-001	-3.967-003	1.212-001	9.334-002	
4.50	1.119-001	1.995-001	7.931-002	8.318-002	7.824-002	1.446-001	1.416-001	9.569-003	1.348-001	-6.921-002	1.781-001	6.861-002	
5.00	1.617-001	1.760-001	7.120-002	6.740-002	7.205-002	1.759-001	1.007-001	-4.307-003	7.787-002	-1.372-001	1.957-001	-7.249-003	

k_{α}	p_1^0	p_2^0	p_3^0	$p_1^{w_1}$	$p_2^{w_1}$	$p_3^{w_1}$
9.755-012	-9.500-004	1.027-011	-1.000-003	1.078-011	-1.050-003	-4.616-011
6.082-009	-4.748-003	6.401-009	-4.997-003	6.720-009	-5.246-003	5.928-009
9.653-008	-9.483-003	1.016-007	-9.974-003	1.066-007	-1.046-002	9.467-008
4.822-007	-1.419-002	5.070-007	-1.941-002	5.317-007	-1.563-002	4.776-007
1.496-006	-1.887-002	1.571-006	-1.980-002	1.646-006	-2.072-002	1.502-006
7.171-006	-2.895-002	7.511-006	-2.931-002	7.852-006	-3.056-002	7.489-006
4.095-005	-3.695-002	2.186-005	-3.839-002	2.788-005	-3.979-002	2.318-005
4.660-005	-4.547-002	4.782-005	-4.688-002	4.961-005	-4.823-002	5.510-005
8.336-005	-5.352-002	8.607-005	-5.467-002	8.885-005	-5.571-002	1.108-004
1.298-004	-6.105-002	1.332-004	-6.165-002	1.367-004	-6.209-002	1.973-004
1.770-004	-6.797-002	1.805-004	-6.771-002	1.844-004	-6.719-002	3.222-004
2.107-004	-7.423-002	2.138-004	-7.276-002	2.178-004	-7.095-002	4.914-004
2.107-004	-7.975-002	2.142-004	-7.762-002	2.193-004	-7.325-002	7.091-004
1.519-004	-8.449-002	1.592-004	-8.495-002	1.693-004	-7.400-002	9.772-004
6.388-006	-8.838-002	2.593-005	-8.108-002	5.013-005	-7.313-002	1.295-003
2.540-004	-9.135-002	-2.056-004	-8.135-002	-1.502-004	-7.060-002	1.659-003
-6.337-004	-9.333-002	-5.486-004	-8.027-002	-4.338-004	-6.637-002	2.061-003
-1.209-003	-9.427-002	-1.006-003	-7.780-002	-7.894-004	-6.045-002	2.492-003
-1.926-003	-9.408-002	-1.565-003	-7.392-002	-1.190-003	-5.284-002	2.938-003
-2.792-003	-9.271-002	-2.199-003	-6.861-002	-1.592-003	-4.362-002	3.384-003
-3.778-003	-9.011-002	-2.863-003	-6.190-002	-1.938-003	-3.287-002	3.813-003
-4.836-003	-8.625-002	-3.502-003	-5.384-002	-2.166-003	-2.076-002	4.210-003
-5.904-003	-8.110-002	-4.050-003	-4.451-002	-2.213-003	-1.746-003	4.562-003
-6.909-003	-7.671-002	-4.446-003	-3.406-002	-2.030-003	-1.758-003	4.861-003
-7.777-003	-7.471-002	-4.640-003	-2.263-002	-1.593-003	-2.163-002	5.107-003
-8.443-003	-5.842-002	-4.604-003	-1.044-002	-9.097-004	3.683-002	5.305-003
-8.861-003	-4.874-002	-4.335-003	-2.300-003	-2.576-005	5.205-002	5.471-003
-9.011-003	-3.822-002	-3.867-003	-1.536-002	-9.783-002	6.697-002	5.628-003
-8.902-003	-2.702-002	-3.259-003	-2.851-002	-1.995-003	8.130-002	5.804-003
-8.572-003	-1.527-002	-2.594-003	4.155-002	2.900-003	9.478-002	6.033-003
-2.430	-8.643-003	-5.842-002	-4.604-003	-1.044-002	3.683-002	5.305-003
-2.240	-8.861-003	-4.874-002	-4.335-003	-2.300-003	-2.576-005	5.471-003
-2.250	-9.011-003	-3.822-002	-3.867-003	-1.536-002	-9.783-002	5.628-003
-2.260	-8.902-003	-2.702-002	-3.259-003	-2.851-002	-1.995-003	8.130-002
-2.270	-8.572-003	-1.527-002	-2.594-003	4.155-002	2.900-003	9.478-002
-2.280	-8.083-003	-3.136-003	-1.968-003	5.429-002	3.571-003	1.072-001
-2.290	-7.513-003	-9.277-003	-1.478-003	6.660-002	3.898-002	1.184-001
-3.000	-6.948-003	2.187-002	-1.212-003	7.835-002	3.797-003	1.281-001
-3.100	-6.471-003	3.456-002	-1.242-003	8.945-002	3.217-003	1.365-001
-3.200	-6.156-003	4.731-002	-1.612-003</			

Table A8a
Impedance Coefficients
 $T = 0.2 \quad H = 0.2$

λ_4	Z_1	Z_2	Z_3	Z_1'	Z_2'	Z_3'
0.01	2.029-006	5.121-004	9.995-006	1.530-003	3.026-006	5.594-004
0.05	5.069-005	2.559-003	2.496-004	7.641-003	7.553-005	2.794-003
0.10	2.024-004	5.111-003	9.957-004	1.523-003	3.010-004	5.570-003
0.15	4.542-004	7.648-003	2.272-002	2.772-002	6.730-002	8.312-003
0.20	8.043-004	1.016-002	3.938-003	3.007-002	1.186-003	1.100-002
0.30	1.790-003	1.510-002	8.696-003	4.413-002	2.600-003	1.616-002
0.40	3.133-003	1.986-002	5.710-002	5.710-002	4.459-003	2.095-002
0.50	4.803-003	2.441-002	2.276-002	6.469-002	6.653-003	2.527-002
0.60	6.760-003	2.871-002	3.149-002	7.870-002	9.059-003	2.909-002
0.70	8.962-003	3.272-002	4.090-002	8.699-002	1.154-002	3.236-002
0.80	1.137-002	3.642-002	5.064-002	9.351-002	1.398-002	3.512-002
0.90	1.393-002	3.980-002	6.036-002	9.825-002	1.623-002	3.741-002
1.00	1.660-002	4.282-002	6.971-002	1.013-001	1.821-002	3.929-002
1.10	1.933-002	4.550-002	7.839-002	1.028-001	1.980-002	4.086-002
1.20	2.207-002	4.781-002	8.609-002	1.028-001	2.096-002	4.225-002
1.30	2.478-002	4.975-002	9.356-002	1.010-001	2.185-002	4.357-002
1.40	2.738-002	5.134-002	9.777-002	0.980-002	2.185-002	4.498-002
1.50	2.983-002	5.259-002	1.010-001	0.973-002	2.161-002	4.661-002
1.60	3.205-002	5.451-002	1.027-001	0.972-002	2.100-002	4.860-002
1.70	3.398-002	5.615-002	1.026-001	0.923-002	2.013-002	5.107-002
1.80	3.556-002	5.456-002	1.010-001	0.975-002	1.914-002	5.411-002
1.90	3.674-002	5.883-002	0.976-002	0.922-002	1.823-002	5.775-002
2.00	3.746-002	5.303-002	0.983-002	0.917-002	1.756-002	6.198-002
2.10	3.773-002	5.529-002	0.983-002	0.983-002	1.734-002	6.673-002
2.20	3.755-002	5.570-002	0.941-002	0.934-002	1.770-002	7.185-002
2.30	3.697-002	5.639-002	0.951-002	1.047-001	1.875-002	7.717-002
2.40	3.606-002	5.743-002	0.972-002	1.127-001	2.053-002	8.248-002
2.50	3.491-002	5.889-002	1.002-001	1.220-001	2.302-002	8.768-002
2.60	3.362-002	6.083-002	1.020-001	1.323-001	2.611-002	9.234-002
2.70	3.229-002	6.324-002	1.049-001	1.433-001	2.969-002	9.657-002
2.80	3.101-002	6.613-002	1.082-002	1.544-001	3.361-002	1.002-001
2.90	2.987-002	6.947-002	1.125-002	1.654-001	3.769-002	1.032-001
3.00	2.893-002	7.322-002	1.169-002	1.759-001	4.180-002	1.056-001
3.10	2.825-002	7.736-002	1.220-002	1.857-001	4.580-002	1.074-001
3.20	2.788-002	8.184-002	1.274-002	1.948-001	4.957-002	1.086-001
3.30	2.784-002	8.664-002	1.059-001	2.028-001	5.303-002	1.095-001
3.40	2.819-002	9.171-002	1.152-001	2.099-001	5.610-002	1.099-001
3.50	2.895-002	9.705-002	1.251-001	2.158-001	5.874-002	1.101-001
3.60	3.018-002	1.026-001	1.354-001	2.206-001	6.092-001	1.101-001
3.70	3.193-002	1.084-001	1.462-001	2.241-001	6.260-002	1.101-001
3.80	3.427-002	1.144-001	1.573-001	2.264-001	6.378-002	1.100-001
3.90	3.729-002	1.205-001	1.684-001	2.273-001	6.446-002	1.101-001
4.00	4.104-002	1.266-001	1.796-001	2.276-001	6.464-002	1.104-001
4.10	4.580-002	1.328-001	1.910-001	2.270-001	6.404-002	1.200-001
4.20	5.165-002	1.412-001	2.094-001	1.414-001	6.629-002	1.483-001

Table A8b
Pressure Coefficients
 $T = 0.2$ $H = 0.2$

λ_d	p_1^0	p_2^0	p_3^0	$p_1^{w_0}$	$p_2^{w_0}$	$p_3^{w_0}$
0.01	1.795-011	-9.000-004	3.988-011	-2.000-003	2.194-011	-1.100-003
0.05	1.119-008	-4.998-003	2.887-008	-9.993-003	1.367-008	-5.495-003
0.10	1.778-007	-8.986-003	3.949-007	-1.995-002	2.170-007	-1.995-002
0.15	8.900-007	-1.345-002	1.974-006	-2.982-002	1.084-006	-1.636-002
0.20	2.767-006	-1.789-002	6.131-006	-3.958-002	3.363-006	-2.167-002
0.30	1.337-005	-2.663-002	2.950-005	-5.858-002	1.612-005	-3.190-002
0.40	8.929-005	-3.512-002	8.674-005	-7.666-002	4.718-005	-4.141-002
0.50	8.929-005	-4.732-002	1.925-004	-9.357-002	1.041-004	-5.000-002
0.60	1.637-004	-5.114-002	3.540-004	-1.090-001	1.900-004	-5.748-002
0.70	2.637-004	-5.854-002	5.652-004	-1.229-001	3.009-004	-6.369-002
0.80	3.784-004	-5.548-002	8.033-004	-1.349-001	4.239-004	-6.849-002
0.90	4.885-004	-7.191-002	1.027-003	-1.449-001	5.375-004	-7.174-002
1.00	5.645-004	-8.779-002	1.178-003	-1.551-001	6.335-004	-7.333-002
1.10	5.681-004	-8.707-002	1.186-003	-1.584-001	6.209-004	-7.323-002
1.20	4.539-004	-8.770-002	9.750-004	-1.615-001	5.311-004	-7.131-002
1.30	1.736-004	-9.161-002	4.768-004	-1.621-001	3.251-004	-6.754-002
1.40	-3.193-003	-9.474-002	-3.601-004	-1.600-001	-2.063-007	-6.188-002
1.50	-1.063-004	-9.699-002	-1.555-003	-1.551-001	-4.252-004	-5.433-002
1.60	-2.079-003	-9.828-002	-3.085-003	-1.472-001	-9.042-004	-4.494-002
1.70	-3.367-003	-9.849-002	-4.873-003	-1.365-001	-1.365-003	-3.378-002
1.80	-4.894-003	-9.754-002	-6.792-003	-1.228-001	-1.716-003	-2.099-002
1.90	-6.598-003	-9.533-002	-8.670-003	-1.062-001	-1.855-003	-6.795-003
2.00	-8.383-003	-9.181-002	-1.031-002	-8.696-002	-1.692-003	8.534-003
2.10	-1.014-002	-8.698-002	-1.153-002	-6.537-002	-1.166-003	2.465-002
2.20	-1.173-002	-8.086-002	-1.217-002	-4.195-002	-2.644-004	4.114-002
2.30	-1.305-002	-7.354-002	-1.217-002	-1.687-002	9.631-004	5.761-002
2.40	-1.402-002	-6.515-002	-1.154-002	-9.010-003	2.404-003	7.363-002
2.50	-1.588-002	-5.586-002	-1.041-002	-3.527-002	3.898-003	8.883-002
2.60	-1.474-002	-4.583-002	-8.972-003	6.140-002	1.029-001	1.029-001
2.70	-1.455-002	-3.524-002	-7.485-003	8.698-002	6.274-003	1.158-001
2.80	-1.408-002	-2.424-002	-6.224-003	1.117-001	6.791-003	1.267-001
2.90	-1.363-002	-1.295-002	-5.447-003	1.352-001	6.671-003	1.361-001
3.00	-1.272-002	-1.441-003	-5.373-003	1.574-001	5.836-003	1.438-001
3.10	-1.207-002	-1.622-002	-6.159-003	1.782-001	4.496-001	1.496-001
3.20	-1.156-002	2.022-002	-7.892-003	1.975-001	1.981-003	1.538-001
3.30	-1.128-002	3.397-002	-1.059-002	2.153-001	-9.240-004	1.558-001
3.40	-1.128-002	4.607-002	-1.418-002	2.315-001	-4.333-003	1.561-001
3.50	-1.160-002	5.838-002	-1.855-002	2.462-001	-8.091-003	1.545-001
3.60	-1.222-002	7.095-002	-2.351-002	2.593-001	-1.202-002	1.509-001
3.70	-1.311-002	8.384-002	-2.879-002	2.709-001	-1.594-002	1.454-001
3.80	-1.419-002	9.712-002	-3.409-002	2.808-001	-1.964-002	1.378-001
3.90	-1.533-002	1.109-001	-3.903-002	2.891-001	-2.298-002	1.282-001
4.00	-1.634-002	1.251-001	-4.319-002	2.955-001	-2.572-002	1.168-001
4.10	-1.781-002	1.481-001	-4.850-002	2.915-001	-2.871-002	2.121-002
4.20	-1.981-002	2.028-001	-5.622-002	2.705-001	-4.277-002	1.353-001
4.30	-2.336-002	2.484-001	-7.396-002	2.196-001	-6.492-002	1.238-001
4.40	-2.844-002	3.145-001	-10.442-002	1.645-001	-9.442-002	0.745-001
4.50	-3.500-002	4.000-001	-14.000-002	2.222-001	-12.222-002	0.000-001
4.60	-4.333-002	5.000-001	-18.333-002	2.889-001	-16.666-002	-0.889-001
4.70	-5.278-002	6.154-001	-23.462-002	3.692-001	-21.768-002	-1.692-001
4.80	-6.444-002	7.500-001	-29.556-002	4.667-001	-27.778-002	-2.667-001
4.90	-7.857-002	9.000-001	-37.143-002	5.857-001	-34.286-002	-3.857-001
5.00	-9.500-002	1.000-000	-46.000-002	7.273-001	-42.727-002	-5.273-001
5.10	-1.139-001	-1.139-001	-1.139-001	-1.139-001	-1.139-001	-1.139-001
5.20	-1.372-001	-1.372-001	-1.372-001	-1.372-001	-1.372-001	-1.372-001
5.30	-1.611-001	-1.611-001	-1.611-001	-1.611-001	-1.611-001	-1.611-001
5.40	-1.856-001	-1.856-001	-1.856-001	-1.856-001	-1.856-001	-1.856-001
5.50	-2.117-001	-2.117-001	-2.117-001	-2.117-001	-2.117-001	-2.117-001
5.60	-2.394-001	-2.394-001	-2.394-001	-2.394-001	-2.394-001	-2.394-001
5.70	-2.688-001	-2.688-001	-2.688-001	-2.688-001	-2.688-001	-2.688-001
5.80	-2.999-001	-2.999-001	-2.999-001	-2.999-001	-2.999-001	-2.999-001
5.90	-3.333-001	-3.333-001	-3.333-001	-3.333-001	-3.333-001	-3.333-001
6.00	-3.692-001	-3.692-001	-3.692-001	-3.692-001	-3.692-001	-3.692-001
6.10	-4.078-001	-4.078-001	-4.078-001	-4.078-001	-4.078-001	-4.078-001
6.20	-4.491-001	-4.491-001	-4.491-001	-4.491-001	-4.491-001	-4.491-001
6.30	-4.931-001	-4.931-001	-4.931-001	-4.931-001	-4.931-001	-4.931-001
6.40	-5.399-001	-5.399-001	-5.399-001	-5.399-001	-5.399-001	-5.399-001
6.50	-5.896-001	-5.896-001	-5.896-001	-5.896-001	-5.896-001	-5.896-001
6.60	-6.423-001	-6.423-001	-6.423-001	-6.423-001	-6.423-001	-6.423-001
6.70	-6.981-001	-6.981-001	-6.981-001	-6.981-001	-6.981-001	-6.981-001
6.80	-7.571-001	-7.571-001	-7.571-001	-7.571-001	-7.571-001	-7.571-001
6.90	-8.194-001	-8.194-001	-8.194-001	-8.194-001	-8.194-001	-8.194-001
7.00	-8.851-001	-8.851-001	-8.851-001	-8.851-001	-8.851-001	-8.851-001
7.10	-9.544-001	-9.544-001	-9.544-001	-9.544-001	-9.544-001	-9.544-001
7.20	-1.027-000	-1.027-000	-1.027-000	-1.027-000	-1.027-000	-1.027-000
7.30	-1.125-000	-1.125-000	-1.125-000	-1.125-000	-1.125-000	-1.125-000
7.40	-1.238-000	-1.238-000	-1.238-000	-1.238-000	-1.238-000	-1.238-000
7.50	-1.367-000	-1.367-000	-1.367-000	-1.367-000	-1.367-000	-1.367-000
7.60	-1.512-000	-1.512-000	-1.512-000	-1.512-000	-1.512-000	-1.512-000
7.70	-1.674-000	-1.674-000	-1.674-000	-1.674-000	-1.674-000	-1.674-000
7.80	-1.856-000	-1.856-000	-1.856-000	-1.856-000	-1.856-000	-1.856-000
7.90	-2.059-000	-2.059-000	-2.059-000	-2.059-000	-2.059-000	-2.059-000
8.00	-2.285-000	-2.285-000	-2.285-000	-2.285-000	-2.285-000	-2.285-000
8.10	-2.535-000	-2.535-000	-2.535-000	-2.535-000	-2.535-000	-2.535-000
8.20	-2.809-000	-2.809-000	-2.809-000	-2.809-000	-2.809-000	-2.809-000
8.30	-3.108-000	-3.108-000	-3.108-000	-3.108-000	-3.108-000	-3.108-000
8.40	-3.433-000	-3.433-000	-3.433-000	-3.433-000	-3.433-000	-3.433-000
8.50	-3.785-000	-3.785-000	-3.785-000	-3.785-000	-3.785-000	-3.785-000
8.60	-4.166-000	-4.166-000	-4.166-000	-4.166-000	-4.166-000	-4.166-000
8.70	-4.578-000	-4.578-000	-4.578-000	-4.578-000	-4.578-000	-4.578-000
8.80	-5.022-000	-5.022-000	-5.022-000	-5.022-000	-5.022-000	-5.022-000
8.90	-5.499-000	-5.499-000	-5.499-000	-5.499-000	-5.499-000	-5.499-000
9.00	-6.011-000	-6.011-000	-6.011-000	-6.011-000	-6.011-000	-6.011-000
9.10	-6.559-000	-6.559-000	-6.559-000	-6.559-000	-6.559-000	-6.559-000
9.20	-7.144-000	-7.144-000	-7.144-000	-7.144-000	-7.144-000	-7.144-000
9.30	-7.768-000	-7.768-000	-7.768-000	-7.768-000	-7.768-000	-7.768-000
9.40	-8.432-000	-8.432-000	-8.432-000	-8.432-000	-8.432-000	-8.432-000
9.50	-9.137-000	-9.137-000	-9.137-000	-9.137-000	-9.137-000	-9.137-000
9.60	-9.884-000	-9.884-000	-9.884-000	-9.884-000	-9.884-000	-9.884-000
9.70	-1.067-000	-1.067-000	-1.067-000	-1.067-000	-1.067-000	-1.067-000
9.80	-1.169-000	-1.169-000	-1.169-000	-1.169-000	-1.169-000	-1.169-000
9.90	-1.291-000	-1.291-000	-1.291-000	-1.291-000	-1.291-000	-1.291-000
10.00	-1.434-000	-1.434-000	-1.434-000	-1.434-000	-1.434-000	-1.434-000

Table A9a
Impedance Coefficients
 $T = 0.3 \quad H = 0.2$

k_0	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	1.449-006	3.888-004	1.799-005	2.644-006	3.914-006	3.364-004
0.05	3.619-005	1.943-003	4.494-004	1.784-005	9.776-005	1.679-003
0.10	1.445-004	3.882-003	1.792-003	2.629-004	3.899-004	3.337-003
0.15	3.244-004	5.810-003	4.013-003	5.816-002	8.729-004	4.954-003
0.20	5.746-004	7.724-003	7.084-003	9.291-003	2.716-002	6.511-003
0.30	1.280-003	1.149-002	1.562-002	2.260-003	3.401-003	9.368-003
0.40	2.243-003	1.514-002	2.702-002	3.859-003	5.884-003	1.177-002
0.50	3.445-002	1.866-002	4.078-002	1.143-001	8.884-003	1.361-002
0.60	4.861-003	2.200-002	5.632-002	1.705-001	5.785-002	1.479-002
0.70	6.468-003	2.517-002	7.304-002	9.814-003	6.725-002	1.527-002
0.80	8.239-003	2.813-002	9.029-002	1.179-002	8.824-002	1.499-002
0.90	1.015-002	3.087-002	1.075-001	1.509-002	2.340-002	1.396-002
1.00	1.218-002	3.738-002	1.240-001	1.509-002	2.696-002	1.219-002
1.10	1.430-002	3.565-002	1.394-001	1.625-002	3.021-002	9.712-003
1.20	1.649-002	3.766-002	1.530-001	1.702-002	3.302-002	6.585-003
1.30	1.871-002	3.940-002	1.644-001	1.737-002	3.525-002	2.891-003
1.40	2.093-002	4.085-002	1.733-001	1.733-002	3.679-002	-1.261-003
1.50	2.309-002	4.201-002	1.793-001	1.694-002	3.752-002	-5.728-003
1.60	2.516-002	4.287-002	1.822-001	1.624-001	3.731-002	-1.034-002
1.70	2.707-002	4.344-002	1.819-001	1.550-002	3.628-002	-1.488-002
1.80	2.874-002	4.375-002	1.787-001	1.474-002	3.427-002	-1.913-002
1.90	3.013-002	4.384-002	1.728-001	1.396-002	3.142-002	-2.285-002
2.00	3.116-002	4.377-002	1.649-001	1.366-002	2.786-002	-2.581-002
2.10	3.180-002	4.364-002	1.559-001	1.324-001	2.383-002	-2.785-002
2.20	3.204-002	4.354-002	1.466-001	1.222-002	1.960-002	-2.886-002
2.30	3.189-002	4.358-002	1.380-001	1.093-001	1.544-002	-2.885-002
2.40	3.139-002	4.384-002	1.310-001	1.008-002	1.165-002	-2.787-002
2.50	3.062-002	4.439-002	1.263-001	2.187-001	8.456-002	-2.611-002
2.60	2.965-002	4.529-002	1.243-001	2.508-002	6.011-003	-2.377-002
2.70	2.856-002	4.657-002	1.252-001	2.853-002	4.407-003	-2.108-002
2.80	2.744-002	4.822-002	1.290-001	3.208-002	3.660-003	-1.827-002
2.90	2.635-002	5.023-002	1.354-001	3.557-002	3.734-003	-1.554-002
3.00	2.534-002	5.260-002	1.442-001	3.889-002	4.555-003	-1.306-002
3.10	2.446-002	5.528-002	1.552-001	4.195-002	6.027-003	-1.096-002
3.20	2.376-002	5.827-002	1.679-001	4.466-002	8.047-003	-9.361-003
3.30	2.325-002	6.153-002	1.822-001	4.700-002	1.051-002	-8.326-003
3.40	2.297-002	6.506-002	1.978-001	4.893-002	1.330-002	-7.923-003
3.50	2.295-002	6.885-002	2.145-001	5.046-002	1.633-002	-8.204-003
3.60	2.323-002	7.287-002	2.321-001	5.157-002	1.949-002	-9.216-003
3.70	2.384-002	7.713-002	2.504-001	5.229-002	2.268-002	-1.100-002
3.80	2.485-002	8.161-002	2.694-001	5.264-002	2.577-002	-1.361-002
3.90	2.631-002	8.628-002	2.888-001	5.265-002	2.862-002	-1.709-002
4.00	2.831-002	9.113-002	3.084-001	5.239-002	3.107-002	-2.145-002
4.50	4.965-002	1.145-001	3.932-001	1.040-001	2.686-002	-5.545-002
5.00	8.854-002	1.158-001	1.955-001	1.258-001	-1.744-002	-8.807-002
						3.017-001
						-5.858-002

Table A9b
Pressure Coefficients
 $T = 0.3 \quad H = 0.2$

k_u	p_1^0	p_1^1	p_1^2	p_1^3	p_1^{40}	p_2^{40}	p_3^{40}					
0.01	2.541-011	-8.500-004	8.967-011	-3.000-003	3.437-011	-1.150-003	-2.431-011	-8.500-004	8.997-011	-3.000-003	-3.289-011	-1.150-003
0.05	1.585-008	-4.249-003	5.592-008	-1.499-002	2.143-008	-5.746-003	1.591-008	-4.250-003	5.618-008	-1.500-002	2.152-008	-5.750-003
0.10	2.519-007	-8.488-003	8.881-007	-2.992-002	3.402-007	-1.145-002	2.541-007	-8.497-003	8.961-007	-2.999-002	3.423-007	-1.150-002
0.15	1.261-006	-1.271-002	4.447-006	-1.709-002	1.699-006	-1.709-002	1.282-006	-1.274-002	4.514-006	-1.727-002	1.727-006	-1.724-002
0.20	3.925-006	-1.691-002	1.380-005	-5.934-002	5.272-006	-2.262-002	4.029-006	-1.697-002	1.417-005	-5.989-002	5.411-005	-2.297-002
0.30	1.901-005	-2.519-002	6.652-005	-8.778-002	2.530-005	-3.322-002	2.009-005	-2.542-002	7.030-005	-8.963-002	2.673-005	-3.441-002
0.40	5.642-005	-3.327-002	1.962-004	-1.148-001	7.414-005	-4.301-002	6.218-005	-3.381-002	2.161-004	-1.191-001	8.168-005	-4.579-002
0.50	1.269-004	-4.110-002	4.373-004	-1.400-001	1.640-004	-5.174-002	1.479-004	-4.184-002	5.096-004	-1.484-001	1.910-004	-5.711-002
0.60	2.372-004	-4.865-002	8.095-004	-1.631-001	3.007-004	-5.921-002	2.972-004	-5.040-002	1.013-003	-1.773-001	3.759-004	-6.838-002
0.70	3.869-004	-5.587-002	1.305-003	-1.836-001	4.797-004	-6.523-002	5.312-004	-5.861-002	1.788-003	-2.060-001	6.553-004	-7.961-002
0.80	5.652-004	-6.274-002	1.893-003	-2.014-001	6.837-004	-6.967-002	8.702-004	-6.675-002	2.886-003	-2.343-001	1.043-003	-9.081-002
0.90	7.488-004	-6.923-002	2.461-003	-2.163-001	8.834-004	-7.239-002	1.333-003	-7.486-002	4.347-003	-2.624-001	1.544-003	-1.020-001
1.00	9.010-004	-7.533-002	2.927-003	-2.280-001	1.040-003	-7.328-002	1.935-003	-8.795-002	6.191-003	-2.903-001	2.156-003	-1.132-001
1.10	9.722-004	-8.099-002	3.137-003	-2.362-001	1.113-003	-7.226-002	2.687-003	-9.104-002	8.414-003	-3.180-001	2.865-003	-1.245-001
1.20	9.022-004	-8.618-002	2.939-003	-2.409-001	1.063-003	-6.925-002	3.593-003	-9.916-002	1.099-002	-3.457-001	3.648-003	-1.359-001
1.30	6.238-004	-9.084-002	2.189-003	-2.418-001	8.666-004	-6.421-002	4.648-003	-1.073-001	1.385-002	-3.732-001	4.470-003	-1.472-001
1.40	6.915-005	-9.489-002	7.751-004	-2.386-001	5.246-004	-5.711-002	5.841-003	-1.156-001	1.693-002	-4.008-001	5.289-003	-1.502-001
1.50	-8.215-004	-9.824-002	-1.351-003	-2.311-001	6.873-005	-6.795-002	7.144-003	-1.240-001	2.009-002	-4.283-001	6.059-003	-1.707-001
1.60	-2.090-003	-1.008-001	-4.152-003	-2.193-001	-4.319-004	-3.680-002	8.520-003	-1.326-001	2.322-002	-4.557-001	6.736-003	-1.818-001
1.70	-3.747-003	-1.023-001	-7.485-003	-2.028-001	-8.729-004	-2.377-002	9.918-003	-1.414-001	2.616-002	-4.830-001	7.284-003	-1.933-001
1.80	-5.763-003	-1.028-001	-1.110-002	-1.817-001	-1.125-003	-9.046-003	1.128-002	-1.503-001	2.879-002	-5.101-001	7.687-003	-2.048-001
1.90	-8.061-003	-1.020-001	-1.465-002	-1.562-001	-1.055-003	7.024-003	1.253-002	-1.594-001	3.100-002	-5.366-001	7.957-003	-2.160-001
2.00	-1.052-002	-9.990-002	-1.776-002	-1.265-001	-5.523-004	2.411-002	1.362-002	-1.686-001	3.277-002	-5.624-001	8.140-003	-2.269-001
2.10	-1.297-002	-9.642-002	-2.005-002	-9.318-002	4.368-004	4.174-002	1.449-002	-1.778-001	3.412-002	-5.872-001	8.318-003	-2.375-001
2.20	-1.526-002	-9.157-002	-2.126-002	-5.699-002	1.887-003	5.940-002	1.511-002	-1.870-001	3.519-002	-6.107-001	8.605-003	-2.476-001
2.30	-1.720-002	-8.546-002	-2.129-002	-1.880-002	3.684-003	7.657-002	1.549-002	-1.961-001	3.619-002	-6.327-001	9.132-003	-2.574-001
2.40	-1.868-002	-7.821-002	-2.020-002	2.042-002	5.633-003	9.279-002	1.566-002	-2.049-001	3.738-002	-6.531-001	1.003-002	-2.677-001
2.50	-1.964-002	-7.002-002	-1.829-002	5.995-002	7.488-003	1.077-001	1.567-002	-2.135-001	3.907-002	-6.717-001	1.142-002	-2.757-001
2.60	-2.005-002	-6.108-002	-1.596-002	9.885-002	8.985-003	1.209-001	1.559-002	-2.216-001	4.155-002	-6.887-001	1.340-002	-2.845-001
2.70	-1.997-002	-5.159-002	-1.369-002	1.365-001	9.891-003	1.322-001	1.532-002	-2.294-001	4.509-002	-7.040-001	1.600-002	-2.933-001
2.80	-1.950-002	-4.170-002	-1.198-002	1.726-001	1.002-002	1.416-001	1.555-002	-2.367-001	4.989-002	-7.179-001	1.925-002	-3.021-001
2.90	-1.876-002	-3.153-002	-1.126-002	2.066-001	9.266-003	1.490-001	1.575-002	-2.436-001	5.613-002	-7.305-001	2.314-002	-3.111-001
3.00	-1.787-002	-2.116-002	-1.186-002	2.388-001	7.585-003	1.542-001	1.622-002	-2.501-001	6.393-002	-7.420-001	2.763-002	-3.203-001
3.10	-1.696-002	-1.062-002	-1.400-002	2.683-001	5.014-003	1.575-001	1.703-002	-2.562-001	7.337-002	-7.525-001	3.265-002	-3.300-001
3.20	-1.615-002	7.576-005	-1.776-002	2.957-001	1.646-003	1.586-001	1.825-002	-2.619-001	8.452-002	-7.622-001	3.814-002	-3.400-001
3.30	-1.552-002	1.095-002	-2.312-002	3.209-001	-2.373-003	1.578-001	1.995-002	-2.673-001	9.743-002	-7.713-001	4.401-002	-3.509-001
3.40	-1.515-002	2.203-002	-2.993-002	3.438-001	-6.867-003	1.548-001	2.220-002	-2.724-001	1.121-001	-7.799-001	5.018-002	-3.623-001
3.50	-1.507-002	3.338-002	-3.795-002	3.644-001	-1.163-002	1.498-001	2.510-002	-2.772-001	1.287-001	-7.883-001	5.655-002	-3.744-001
3.60	-1.530-002	4.507-002	-4.683-002	3.828-001	-1.646-002	1.427-001	2.874-002	-2.817-001	1.471-001	-7.966-001	6.300-002	-3.872-001
3.70	-1.580-002	5.718-002	-5.615-002	3.999-001	-2.114-002	1.336-001	3.321-002	-2.861-001	1.675-001	-8.051-001	6.941-002	-4.008-001
3.80	-1.651-002	6.977-002	-6.542-002	4.127-001	-2.548-002	1.222-001	3.865-002	-2.904-001	1.898-001	-8.140-001	7.563-002	-4.153-001
3.90	-1.734-002	8.273-002	-7.404-002	4.241-001	-2.929-002	1.088-001	4.519-002	-2.948-001	2.141-001	-8.237-001	8.147-002	-4.305-001
4.00	-1.811-002	9.672-002	-8.138-002	4.328-001	-3.246-002	9.308-002	5.296-002	-2.994-001	2.402-001	-8.346-001	8.673-002	-4.466-001
4.50	-1.132-002	1.747-001	-7.550-002	4.228-001	-3.886-002	-1.838-002	1.135-001	-3.371-001	3.848-001	-9.257-001	9.574-002	-5.338-001
5.00	4.151-002	2.337-001	1.161-002	2.489-001	-5.298-002	-1.593-001	1.805-001	-4.422-001	4.513-001	-1.082-000	7.202-002	-5.338-001

Table A10a
Impedance Coefficients
 $T = 0.5 \quad H = 0.2$

k_d	L_1	L_2	L_3	L_4	L_5	L_6	L_7					
0.01	8.032-007	2.457-004	3.571-005	4.612-003	2.232-006	3.753-004	1.786-005	1.605-003	2.678-006	2.028-004	1.071-005	1.237-003
0.05	2.007-005	1.228-003	8.919-004	2.303-002	1.874-003	1.874-003	4.458-004	8.008-003	6.688-005	1.012-003	2.676-004	6.178-003
0.10	8.017-005	2.454-003	3.556-003	4.587-002	2.217-004	3.734-003	1.776-003	1.591-002	2.666-004	2.008-003	1.068-003	1.231-002
0.15	1.800-004	3.675-003	7.955-003	6.834-002	4.944-004	5.564-003	3.966-003	2.358-002	5.966-004	2.975-003	2.993-003	1.835-002
0.20	3.189-004	4.889-003	1.403-002	9.025-002	8.683-004	7.350-003	6.981-003	3.094-002	1.052-003	3.898-003	2.973-003	2.424-002
0.30	7.112-004	7.288-003	3.089-002	1.317-001	1.887-003	1.074-002	1.527-002	4.432-002	2.317-003	5.558-003	9.373-003	3.545-002
0.40	1.249-003	9.636-003	5.327-002	1.692-001	3.197-003	1.383-002	2.610-002	5.537-002	3.997-003	6.892-003	1.632-002	4.562-002
0.50	1.925-003	1.192-002	8.014-002	2.016-001	4.699-003	1.656-002	3.881-002	6.361-002	6.012-003	7.821-003	2.484-002	5.450-002
0.60	2.728-003	1.413-002	1.103-001	2.284-001	6.285-003	1.890-002	5.264-002	6.877-002	8.273-003	8.287-003	3.469-002	6.189-002
0.70	3.652-003	1.626-002	1.426-001	2.493-001	7.845-003	2.088-002	6.684-002	7.074-002	1.068-002	8.251-003	4.562-002	6.763-002
0.80	4.689-003	1.830-002	1.757-001	2.661-001	9.283-003	2.251-002	8.066-002	6.960-002	1.314-002	7.690-003	5.737-002	7.162-002
0.90	5.836-003	2.025-002	2.086-001	2.730-001	1.051-002	2.387-002	9.342-002	6.559-002	1.555-002	6.598-003	6.969-002	7.376-002
1.00	7.088-003	2.209-002	2.401-001	1.147-001	1.147-002	2.503-002	1.045-001	5.908-002	1.782-002	4.979-003	8.235-002	7.400-002
1.10	8.444-003	2.391-002	2.694-001	1.211-002	1.211-002	2.610-002	1.134-001	5.053-002	1.984-002	2.853-003	9.510-002	7.227-002
1.20	9.900-003	2.541-002	2.953-001	1.242-002	1.242-002	2.717-002	1.198-001	4.054-002	2.151-002	2.543-004	1.077-001	6.851-002
1.30	1.145-002	2.684-002	3.171-001	1.242-002	1.242-002	2.835-002	1.232-001	2.978-002	2.273-002	2.765-003	1.197-001	6.269-002
1.40	1.308-002	2.810-002	3.340-001	1.214-002	1.214-002	2.977-002	1.235-001	1.902-002	2.338-002	6.127-003	1.309-001	5.481-002
1.50	1.477-002	2.916-002	3.452-001	1.166-002	1.166-002	3.150-002	1.209-001	9.101-003	2.338-002	9.723-003	1.409-001	4.491-002
1.60	1.649-002	2.998-002	3.503-001	1.111-002	1.111-002	3.364-002	1.156-001	8.722-004	2.264-002	1.341-002	1.491-001	3.316-002
1.70	1.819-002	3.055-002	3.491-001	1.061-002	1.061-002	3.621-002	1.080-001	-4.849-003	2.111-002	-1.700-002	1.552-001	1.985-002
1.80	1.981-002	3.086-002	3.419-001	1.033-002	1.033-002	3.920-002	9.907-002	-7.398-003	1.880-002	-2.030-002	1.587-001	5.445-003
1.90	2.129-002	3.091-002	3.294-001	1.043-002	1.043-002	4.256-002	8.982-002	-6.379-003	1.577-002	-2.308-002	1.592-001	-9.441-003
2.00	2.257-002	3.074-002	3.131-001	1.102-002	1.102-002	4.614-002	8.144-002	-1.765-003	1.218-002	-2.515-002	1.567-001	-2.406-002
2.10	2.358-002	3.040-002	2.946-001	1.219-002	1.219-002	4.977-002	7.511-002	6.022-003	8.235-003	-2.637-002	1.513-001	-3.761-002
2.20	2.428-002	2.997-002	2.760-001	1.392-002	1.392-002	5.326-002	7.179-002	1.619-002	4.195-003	-2.668-002	1.433-001	-4.939-002
2.30	2.468-002	2.952-002	2.593-001	1.617-002	1.617-002	5.644-002	7.209-002	2.764-002	3.192-004	-2.609-002	1.334-001	-5.882-002
2.40	2.477-002	2.914-002	2.461-001	1.879-002	1.879-002	5.916-002	7.618-002	3.918-002	-3.166-003	-2.472-002	1.222-001	-6.559-002
2.50	2.460-002	2.888-002	2.376-001	2.162-002	2.162-002	6.134-002	8.385-002	4.969-002	-6.090-003	-2.273-002	1.106-001	-6.963-002
2.60	2.422-002	2.881-002	2.344-001	2.765-002	2.765-002	6.296-002	9.456-002	5.827-002	-8.355-003	-2.034-002	9.913-002	-7.106-002
2.70	2.368-002	2.893-002	2.368-001	3.072-001	3.072-001	6.410-002	1.076-001	6.427-002	-9.929-003	-1.772-002	8.834-002	-7.017-002
2.80	2.303-002	2.928-002	2.445-001	3.380-001	3.380-001	6.478-002	1.222-001	6.731-002	-1.083-002	-1.506-002	7.861-002	-6.731-002
2.90	2.232-002	2.984-002	2.571-001	3.680-001	3.680-001	6.511-002	1.376-001	6.726-002	-1.112-002	-1.250-002	7.019-002	-6.286-002
3.00	2.158-002	3.062-002	2.742-001	3.964-001	3.964-001	6.521-002	1.531-001	6.414-002	-1.088-002	-1.015-002	6.320-002	-5.715-002
3.10	2.084-002	3.159-002	2.952-001	4.226-001	4.226-001	6.516-002	1.681-001	5.810-002	-1.018-002	-8.096-003	5.773-002	-5.049-002
3.20	2.013-002	3.275-002	3.196-001	4.463-001	4.463-001	6.508-002	1.822-001	4.934-002	-9.111-003	-6.403-003	5.379-002	-4.313-002
3.30	1.946-002	3.409-002	3.471-001	4.671-001	4.671-001	6.505-002	1.949-001	3.811-002	-7.763-003	-5.112-003	5.141-002	-3.529-002
3.40	1.885-002	3.560-002	3.772-001	4.848-001	4.848-001	6.516-002	2.057-001	2.469-002	-6.213-003	-4.257-003	5.058-002	-2.713-002
3.50	1.831-002	3.729-002	4.097-001	4.989-001	4.989-001	6.548-002	2.205-001	9.389-003	-4.542-003	-3.864-003	5.135-002	-1.885-002
3.60	1.785-002	3.913-002	4.441-001	5.093-001	5.093-001	6.608-002	2.209-001	-7.452-003	-2.832-003	-3.952-003	5.376-002	-1.059-002
3.70	1.750-002	4.115-002	4.802-001	5.155-001	5.155-001	6.701-002	2.245-001	-2.544-002	-1.172-003	-4.534-003	5.784-002	-2.575-003
3.80	1.728-002	4.332-002	5.173-001	5.171-001	5.171-001	6.833-002	2.251-001	-4.412-002	3.419-004	-5.616-003	6.368-002	4.986-003
3.90	1.721-002	4.566-002	5.548-001	5.136-001	5.136-001	7.006-002	2.225-001	-6.293-002	1.603-003	-7.198-003	7.130-002	1.181-002
4.00	1.733-002	4.815-002	5.920-001	5.048-001	5.048-001	7.221-002	2.166-001	-8.123-002	2.495-003	-9.220-003	8.073-002	1.755-002
4.50	2.177-002	6.203-002	7.315-001	3.984-002	3.984-002	8.718-002	1.448-001	-1.395-001	-2.572-003	-2.299-002	1.490-001	1.587-002
5.00	3.381-002	7.416-002	7.049-001	5.511-002	5.511-002	9.708-002	7.793-002	-1.032-001	-2.506-002	-2.677-002	2.074-001	-5.819-002

Table A10b
Pressure Coefficients
 $T = 0.5 \quad H = 0.2$

k_u	p_1^0	p_2^0	p_3^0	p_4^0	p_5^0	p_6^0	p_7^0	p_8^0	p_9^0	p_{10}^0
0.01	3.751-011	-7.500-004	2.500-010	-5.000-003	6.251-011	-1.250-003	-8.442-012	-7.500-004	2.500-010	-5.000-003
0.05	2.339-008	-3.749-003	1.559-007	-2.498-002	3.899-008	-6.242-005	2.341-008	-3.749-003	1.561-007	-2.500-002
0.10	3.719-007	-7.492-003	2.476-006	-4.995-002	6.182-007	-1.244-002	3.738-007	-7.496-003	2.489-006	-4.997-002
0.15	5.083-006	-1.122-002	1.238-005	-7.449-002	3.081-006	-1.854-002	1.885-006	-1.124-002	1.253-005	-7.488-002
0.20	5.799-006	-1.493-002	3.846-005	-9.880-002	9.568-006	-2.450-002	5.924-006	-1.496-002	3.929-005	-9.973-002
0.30	2.812-005	-2.228-002	1.853-004	-1.460-001	4.581-005	-3.584-002	2.953-005	-2.238-002	1.946-004	-1.479-001
0.40	8.366-005	-2.950-002	5.464-004	-1.907-001	1.339-004	-4.613-002	9.136-005	-2.974-002	5.965-004	-1.979-001
0.50	1.898-004	-3.656-002	1.219-003	-2.321-001	2.954-004	-5.507-002	2.172-004	-3.701-002	1.402-003	-2.462-001
0.60	3.552-004	-4.345-002	2.261-003	-2.699-001	5.406-004	-6.243-002	4.368-004	-4.419-002	2.778-003	-2.937-001
0.70	5.846-004	-5.016-002	3.663-003	-3.034-001	8.620-004	-6.799-002	7.816-004	-5.130-002	4.885-003	-3.406-001
0.80	8.652-004	-5.672-002	5.327-003	-3.323-001	1.232-003	-7.159-002	1.283-003	-5.833-002	7.862-003	-3.869-001
0.90	1.169-003	-6.310-002	7.062-003	-3.562-001	1.603-003	-7.310-002	1.973-003	-6.532-002	1.181-002	-4.327-001
1.00	1.448-003	-6.934-002	8.592-003	-3.749-001	1.918-003	-7.241-002	2.877-003	-7.228-002	1.678-002	-4.782-001
1.10	1.638-003	-7.541-002	9.580-003	-3.889-001	2.116-003	-6.942-002	4.017-003	-7.927-002	2.277-002	-5.235-001
1.20	1.655-003	-8.179-002	9.656-003	-3.953-001	2.147-003	-6.409-002	5.410-003	-8.633-002	2.970-002	-5.688-001
1.30	1.404-003	-8.695-002	8.475-003	-3.961-001	1.989-003	-6.638-002	7.057-003	-9.351-002	3.741-002	-6.143-001
1.40	7.833-004	-9.231-002	5.772-003	-3.903-001	1.661-003	-4.630-002	8.945-003	-1.009-001	4.567-002	-6.600-001
1.50	-3.014-004	-9.724-002	1.430-003	-3.771-001	1.232-003	-3.390-002	1.104-002	-1.085-001	5.416-002	-7.061-001
1.60	-1.923-003	-1.016-001	-4.457-003	-3.563-001	8.278-004	-1.932-002	1.329-002	-1.165-001	6.250-002	-7.524-001
1.70	-4.114-003	-1.052-001	-1.154-002	-3.275-001	6.182-004	-2.804-003	1.560-002	-1.248-001	7.028-002	-7.987-001
1.80	-6.844-003	-1.079-001	-1.922-002	-2.906-001	7.903-004	-1.528-002	1.787-002	-1.336-001	7.712-002	-8.447-001
1.90	-1.001-002	-1.394-001	-2.669-002	-2.459-001	1.507-003	-3.443-002	1.996-002	-1.428-001	8.274-002	-8.898-001
2.00	-1.344-002	-1.095-001	-1.311-002	-1.941-001	2.857-003	-5.405-002	2.176-002	-1.523-001	8.707-002	-9.333-001
2.10	-1.690-002	-1.083-001	-3.771-002	-1.961-001	4.816-003	-7.344-002	2.314-002	-1.620-001	9.027-002	-9.744-001
2.20	-2.014-002	-1.056-001	-4.005-002	-7.444-002	7.222-003	-9.192-002	2.404-002	-1.718-001	9.275-002	-1.012-000
2.30	-2.294-002	-1.017-001	-4.009-002	-9.787-003	9.800-003	-1.089-001	2.444-002	-1.816-001	9.516-002	-1.047-000
2.40	-2.513-002	-9.666-002	-3.819-002	5.577-002	1.220-002	-1.239-001	2.437-002	-1.912-001	9.826-002	-1.078-000
2.50	-2.661-002	-9.072-002	-3.506-002	1.207-001	1.408-002	-1.365-001	2.391-002	-2.004-001	1.029-001	-1.104-000
2.60	-2.739-002	-8.410-002	-3.161-002	1.838-001	1.514-002	-1.466-001	2.316-002	-2.092-001	1.097-001	-1.127-000
2.70	-2.752-002	-7.701-002	-2.876-002	2.443-001	1.517-002	-1.541-001	2.225-002	-2.174-001	1.194-001	-1.146-000
2.80	-2.711-002	-6.961-002	-2.733-002	3.016-001	1.408-002	-1.590-001	2.129-002	-2.251-001	1.324-001	-1.162-000
2.90	-2.630-002	-6.199-002	-2.794-002	3.554-001	1.189-002	-1.613-001	2.030-002	-2.323-001	1.492-001	-1.176-000
3.00	-2.523-002	-5.422-002	-3.097-002	4.056-001	8.681-003	-1.610-001	1.966-002	-2.389-001	1.702-001	-1.187-000
3.10	-2.402-002	-4.633-002	-3.656-002	4.522-001	4.640-003	-1.582-001	1.918-002	-2.450-001	1.954-001	-1.196-000
3.20	-2.279-002	-3.830-002	-4.464-002	4.952-001	-2.141-005	-1.530-001	1.905-002	-2.500-001	2.252-001	-1.204-000
3.30	-2.163-002	-3.009-002	-5.492-002	5.344-001	-5.066-003	-1.453-001	1.938-002	-2.557-001	2.598-001	-1.211-000
3.40	-2.061-002	-2.167-002	-6.694-002	5.700-001	-1.025-002	-1.353-001	2.025-002	-2.603-001	2.994-001	-1.218-000
3.50	-1.975-002	-1.296-002	-8.012-002	6.063-001	-1.535-002	-1.228-001	2.179-002	-2.644-001	3.442-001	-1.225-000
3.60	-1.909-002	-3.927-003	-9.375-002	6.296-001	-2.016-002	-1.079-001	2.413-002	-2.682-001	3.943-001	-1.232-000
3.70	-1.840-002	5.506-003	-1.070-001	6.532-001	-2.452-002	-9.082-002	2.740-002	-2.717-001	4.497-001	-1.242-000
3.80	-1.825-002	1.539-002	-1.192-001	6.722-001	-2.831-002	-7.149-002	3.179-002	-2.750-001	5.103-001	-1.254-000
3.90	-1.796-002	2.576-002	-1.293-001	6.862-001	-3.169-002	-5.010-002	3.743-002	-2.787-001	5.758-001	-1.270-000
4.00	-1.764-002	3.663-002	-1.367-001	6.946-001	-3.407-002	-2.685-002	4.450-002	-2.817-001	6.455-001	-1.292-000
4.50	-1.157-002	9.650-002	-1.189-001	6.265-001	-4.096-002	-1.043-001	1.029-001	-3.145-001	1.002-000	-1.503-000
5.00	5.002-003	1.823-001	-4.135-002	3.447-001	-2.066-001	-1.748-001	1.748-001	-3.4075-001	1.183+000	-1.824+000

$\mathcal{A}_0$	$\mathcal{Z}_1$	$\mathcal{A}_2$	$\mathcal{Z}_3$	$\mathcal{A}_3$	$\mathcal{Z}_1$	$\mathcal{A}_2$	$\mathcal{Z}_3$					
0.01	1.087-005	2.108-003	4.549-007	7.958-005	1.190-005	1.864-003	4.815-004	2.274-005	2.048-003	4.447-006	5.492-004	
0.05	2.716-004	1.153-002	1.136-005	3.975-004	2.971-004	9.310-003	1.162-004	2.403-003	5.681-004	1.022-002	1.111-004	2.743-003
0.10	1.048-005	2.446-003	4.534-005	7.928-004	1.884-004	1.895-002	4.633-004	4.789-003	2.033-002	2.033-002	5.468-003	8.156-003
0.15	2.437-003	3.366-002	1.016-004	1.184-003	2.647-003	2.766-002	1.037-003	7.109-003	5.080-003	3.022-002	9.950-004	8.156-003
0.20	4.321-003	4.580-002	1.794-004	1.568-003	4.666-003	3.657-002	1.830-003	9.362-003	8.980-003	3.978-002	1.761-003	1.079-002
0.30	9.651-003	6.804-002	3.968-004	2.308-003	1.024-002	5.354-002	4.032-003	1.355-002	1.988-002	5.750-002	3.918-003	1.582-002
0.40	1.690-002	8.953-002	6.886-004	2.998-003	1.759-002	6.904-002	1.719-002	3.457-002	7.272-002	6.846-003	2.043-002	2.843-002
0.50	2.622-002	1.100-001	1.043-003	3.628-003	2.630-002	8.273-002	1.068-002	2.013-002	5.251-002	8.475-002	1.046-002	2.451-002
0.60	3.724-002	1.294-001	1.448-003	4.183-003	3.588-002	9.439-002	1.441-002	2.228-002	7.307-002	9.302-002	1.468-002	2.796-002
0.70	4.990-002	1.473-001	1.888-003	4.459-003	4.582-002	1.039-001	1.860-002	2.356-002	9.555-002	9.708-002	1.941-002	3.068-002
0.80	6.409-002	1.638-001	2.347-003	5.049-003	5.559-002	1.113-001	2.293-002	2.395-002	1.192-001	9.656-002	2.452-002	3.262-002
0.90	7.967-002	1.784-001	2.810-003	5.751-003	6.465-002	1.167-001	2.693-002	2.345-002	1.431-001	9.120-002	2.491-002	3.369-002
1.00	9.650-002	1.912-001	3.260-003	5.565-003	7.250-002	1.203-001	3.069-002	2.210-002	1.685-001	8.085-002	3.545-002	3.385-002
1.10	1.144-001	2.017-001	3.680-003	5.693-003	7.868-002	1.226-001	3.393-002	1.998-002	1.863-001	6.544-002	4.099-002	3.304-002
1.20	1.332-001	2.098-001	4.051-003	5.740-003	8.280-002	1.241-001	3.646-002	1.721-002	2.074-001	4.509-002	4.637-002	3.123-002
1.30	1.524-001	2.150-001	4.356-003	5.714-003	8.459-002	1.253-001	3.809-002	1.397-002	2.227-001	2.4013-002	5.140-002	2.838-002
1.40	1.717-001	2.171-001	4.575-003	5.630-003	8.392-002	1.272-001	3.870-002	1.065-002	2.328-001	2.878-002	5.583-002	2.452-002
1.50	1.903-001	2.157-001	4.690-003	5.508-003	8.092-002	1.305-001	3.817-002	7.065-003	2.364-001	4.4052-002	5.941-002	1.972-002
1.60	2.073-001	2.108-001	4.589-003	5.375-003	7.605-002	1.363-001	3.652-002	4.061-003	2.324-001	7.143-002	6.183-002	1.415-002
1.70	2.217-001	2.027-001	4.566-003	5.265-003	7.015-002	1.452-001	3.386-002	1.861-003	2.202-001	1.0533-001	6.283-002	8.084-003
1.80	2.323-001	1.918-001	4.327-003	5.219-003	6.443-002	1.520-001	3.048-002	8.231-004	1.999-001	1.333-001	6.222-002	1.947-003
1.90	2.382-001	1.794-001	3.997-003	5.272-003	6.037-002	1.745-001	2.681-002	1.197-003	1.727-001	1.550-001	5.998-002	3.756-003

Table A11b
Pressure Coefficients
 $T = 0.05 \quad H = 0.5$

[illegible]

Z_4	Z_3	Z_2	Z_1	Z_3	Z_2	Z_1	Z_3	Z_2	Z_1	Z_3	Z_2	Z_1	Z_3	Z_2	Z_1
0.01	9.352-006	2.068-003	2.068-003	2.068-004	1.665-006	2.674-004	1.152-003	1.775-003	8.759-006	8.623-004	2.076-005	1.773-003	7.893-006	9.515-004	
0.05	2.337-004	1.034-002	1.600-005	1.335-003	2.875-004	8.864-003	2.187-004	4.304-003	2.187-004	4.304-003	5.185-004	8.849-003	1.972-004	4.752-003	
0.10	9.339-004	2.065-002	1.659-004	2.662-003	1.145-003	1.766-002	8.719-004	8.558-003	8.719-004	8.558-003	2.068-003	1.759-002	7.872-004	9.471-003	
0.15	2.097-003	3.090-002	3.715-004	3.973-003	2.560-003	2.632-002	1.950-003	1.271-002	1.950-003	1.271-002	4.634-003	2.613-002	1.765-003	1.412-002	
0.20	3.718-003	6.108-002	6.562-004	5.258-003	4.508-003	3.478-002	3.440-003	1.673-002	3.440-003	1.673-002	8.188-003	3.435-002	3.124-003	1.868-002	
0.30	3.306-003	4.109-002	1.449-003	7.725-003	9.871-003	5.086-002	7.563-003	2.414-002	7.563-003	2.414-002	1.811-002	4.950-002	6.938-003	2.738-002	
0.40	1.663-002	8.050-002	2.510-003	1.001-002	1.690-002	6.548-002	1.303-002	3.048-002	6.548-002	3.048-002	3.144-002	6.230-002	1.212-002	3.534-002	
0.50	2.259-002	9.914-002	3.796-003	1.206-002	2.516-002	7.833-002	1.955-002	3.550-002	1.955-002	3.550-002	4.767-002	7.217-002	4.232-002	4.236-002	
0.60	3.212-002	1.169-001	5.258-003	1.385-002	3.418-002	8.920-002	2.680-002	3.901-002	2.680-002	3.901-002	6.623-002	7.858-002	2.599-002	4.829-002	
0.70	4.314-002	1.336-001	6.841-003	1.535-002	4.343-002	9.804-002	3.446-002	4.090-002	3.446-002	4.090-002	8.647-002	8.112-002	3.435-002	5.298-002	
0.80	5.559-002	1.491-001	8.493-003	1.654-002	5.240-002	1.049-001	4.216-002	4.114-002	4.216-002	4.114-002	1.077-001	7.949-002	4.344-002	5.630-002	
0.90	6.962-002	1.633-001	1.016-002	1.742-002	6.059-002	1.099-001	4.954-002	3.975-002	4.954-002	3.975-002	1.292-002	7.342-002	5.307-002	5.815-002	
1.00	8.460-002	1.759-001	1.177-002	1.799-002	6.753-002	1.134-001	5.626-002	3.681-002	5.626-002	3.681-002	1.502-001	6.273-002	6.306-002	5.841-002	
1.10	1.011-001	1.868-001	1.329-002	1.825-002	7.280-002	1.158-001	6.195-002	3.246-002	6.195-002	3.246-002	1.697-001	4.732-002	7.319-002	5.696-002	
1.20	1.198-001	1.956-001	1.464-002	1.821-002	7.606-002	1.175-001	6.628-002	2.695-002	6.628-002	2.695-002	1.868-001	2.717-002	8.320-002	5.368-002	
1.30	1.375-001	2.018-001	1.575-002	1.790-002	7.707-002	1.193-001	6.891-002	2.058-002	6.891-002	2.058-002	2.003-001	2.498-003	9.275-002	4.843-002	
1.40	1.568-001	2.050-001	1.656-002	1.736-002	7.576-002	1.219-001	6.955-002	1.381-002	6.955-002	1.381-002	2.088-001	2.619-002	1.014-001	4.117-002	
1.50	1.762-001	2.047-001	1.698-002	1.667-002	7.234-002	1.262-001	6.800-002	7.234-003	6.800-002	7.234-003	2.107-001	5.788-002	1.086-001	3.190-002	
1.60	1.947-001	2.005-001	1.696-002	1.591-002	6.735-002	1.333-001	6.426-002	1.567-002	6.426-002	1.567-002					

Table A12b

Pressure Coefficients

 $T = 0.1 \quad H = 0.5$

k_d	p_1^0	p_2^0	p_3^0	p_1^{10}	p_2^{10}	p_3^{10}	p_1^{100}	p_2^{100}	p_3^{100}
0.01	6.170-011	-2.375-003	2.598-011	-1.000-003	6.819-011	-2.625-003	-1.206-011	-2.375-003	2.498-011
0.05	3.843-008	-1.187-002	1.618-008	-6.997-003	4.245-008	-1.311-002	3.693-008	-1.187-002	1.560-008
0.10	6.082-007	-2.373-002	2.558-007	-9.975-003	6.702-007	-2.615-002	5.917-007	-2.373-002	2.489-007
0.15	3.023-006	-3.555-002	1.270-006	-1.492-002	3.327-006	-3.903-002	2.985-006	-1.492-002	1.254-006
0.20	9.310-006	-4.732-002	3.902-006	-1.980-002	1.021-005	-5.168-002	9.309-006	-1.980-002	3.935-006
0.30	4.366-005	-7.066-002	1.820-005	-2.934-002	4.742-005	-7.601-002	4.489-005	-7.100-002	1.954-005
0.40	1.231-004	-9.366-002	5.091-005	-3.845-002	1.320-004	-9.858-002	1.455-004	-3.956-002	6.714-005
0.50	2.558-004	-1.163-001	1.048-004	-4.703-002	2.699-004	-1.189-001	3.471-004	-4.916-002	1.420-004
0.60	4.227-004	-1.384-001	1.713-004	-5.497-002	4.386-004	-1.365-001	7.006-004	-1.407-001	2.929-004
0.70	5.599-004	-1.601-001	2.249-004	-6.220-002	5.743-004	-1.509-001	1.259-003	-1.635-001	5.003-004
0.80	5.420-004	-1.814-001	2.183-004	-6.864-002	5.665-004	-1.619-001	2.076-003	-1.861-001	8.099-004
0.90	1.653-004	-2.024-001	8.032-005	-7.421-002	2.613-004	-1.690-001	3.204-003	-2.084-001	1.224-003
1.00	-8.664-004	-2.229-001	-2.835-004	-7.883-002	-5.240-004	-1.719-001	4.690-003	-2.307-001	1.768-003
1.10	-2.951-003	-2.430-001	-9.862-004	-8.240-002	-1.970-003	-1.700-001	6.572-003	-2.529-001	2.382-003
1.20	-6.586-003	-2.625-001	-2.149-003	-8.477-002	-4.208-003	-1.631-001	8.868-003	-2.750-001	3.115-003
1.30	-1.235-002	-2.810-001	-3.880-003	-8.577-002	-7.247-002	-1.505-001	1.157-002	-2.973-001	3.924-003
1.40	-2.085-002	-2.979-001	-6.249-003	-8.515-002	-1.089-002	-1.316-001	1.463-002	-3.198-001	4.770-003
1.50	-3.259-002	-3.126-001	-9.239-003	-8.263-002	-1.462-002	-1.061-001	1.793-002	-3.427-001	5.598-003
1.60	-4.782-002	-3.232-001	-1.270-002	-7.790-002	-1.756-002	-7.370-002	2.128-002	-3.661-001	6.341-003
1.70	-6.628-002	-3.287-001	-1.631-002	-7.072-002	-1.849-002	-3.454-002	2.443-002	-3.900-001	6.924-003
1.80	-8.702-002	-3.275-001	-1.959-002	-6.098-002	-1.599-002	1.043-002	2.705-002	-4.143-001	7.283-003
1.90	-1.083-001	-3.184-001	-2.193-002	-4.885-002	-8.890-003	5.941-002	2.885-002	-4.388-001	7.392-003
2.00	-1.278-001	-3.012-001	-2.282-002	-3.483-002	3.293-003	1.099-001	2.963-002	-4.631-001	7.276-003
2.10	-1.435-001	-2.768-001	-2.195-002	-1.965-002	2.000-002	1.593-001	2.938-002	-4.868-001	7.017-003
2.20	-1.536-001	-2.470-001	-1.937-002	-4.160-003	3.967-002	2.050-001	2.827-002	-5.095-001	6.737-003
2.30	-1.576-001	-2.140-001	-1.544-002	1.090-002	6.012-002	2.457-001	2.662-002	-5.309-001	6.559-003
2.40	-1.559-001	-1.798-001	-1.074-002	2.503-002	7.915-002	2.809-001	2.479-002	-5.508-001	6.586-003
2.50	-1.497-001	-1.462-001	-5.863-003	3.800-002	9.497-002	3.106-001	2.310-002	-5.694-001	6.879-003
2.60	-1.402-001	-1.138-001	-1.329-003	4.980-002	1.064-001	3.357-001	2.179-002	-5.866-001	7.461-003
2.70	-1.289-001	-8.308-002	2.481-003	6.053-002	1.129-001	3.566-001	2.102-002	-6.027-001	8.331-003
2.80	-1.167-001	-5.383-002	5.325-003	7.036-002	1.143-001	3.740-001	2.089-002	-6.177-001	9.471-003
2.90	-1.046-001	-2.573-002	7.080-003	7.945-002	1.108-001	3.884-001	2.143-002	-6.317-001	1.085-002
3.00	-9.321-002	1.685-003	7.707-003	8.793-002	1.029-001	3.998-001	2.268-002	-6.448-001	1.247-002
3.10	-8.294-002	2.896-002	7.231-003	9.592-002	9.992-002	4.083-001	2.469-002	-6.569-001	1.431-002
3.20	-7.407-002	5.666-002	5.721-003	1.035-001	7.550-002	4.138-001	2.751-002	-6.681-001	1.635-002
3.30	-6.673-002	8.538-002	3.278-003	1.108-001	5.723-002	4.161-001	3.123-002	-6.783-001	1.861-002
3.40	-6.096-002	1.158-001	3.410-005	1.178-001	3.670-002	4.149-001	3.602-002	-6.874-001	2.111-002
3.50	-5.669-002	1.486-001	-3.848-003	1.246-001	1.457-002	4.099-001	4.210-002	-6.954-001	2.387-002
3.60	-5.367-002	1.848-001	-8.166-003	1.314-001	-8.527-003	4.006-001	4.981-002	-7.020-001	2.697-002
3.70	-5.144-002	2.255-001	-1.266-002	1.381-001	-3.190-002	3.867-001	5.963-002	-7.073-001	3.046-002
3.80	-4.915-002	2.722-001	-1.698-002	1.449-001	-5.490-002	3.673-001	7.839-002	-7.137-001	3.446-002
3.90	-4.524-002	3.267-001	-2.064-002	1.521-001	-7.588-002	3.417-001	8.889-002	-7.203-001	3.913-002
4.00	-3.697-002	3.915-001	-2.293-002	1.596-001	-9.741-002	3.086-001	1.109-001	-7.156-001	4.466-002
4.50	3.889-001	8.265-001	3.643-002	1.726-001	-2.830-001	-3.397-002	3.599-001	-8.467-001	8.420-001
5.00	7.675-001	1.264-001	1.692-002	-6.693-003	-5.844-001	-1.825-001	1.563-001	-1.211+000	3.555-002

ω	Z_1	Z_2	Z_3	Z_4	Z_5
0.01	7.214-006	5.714-006	8.327-004	1.081-005	1.614-003
0.05	1.803-004	1.427-004	4.159-003	2.698-004	8.059-003
0.10	7.203-004	5.690-004	8.287-003	1.074-005	1.605-002
0.15	1.618-003	1.273-003	2.398-003	2.398-003	2.398-003
0.20	2.868-003	2.247-003	1.634-002	4.216-003	3.156-002
0.30	6.409-003	4.950-003	3.393-002	9.194-003	4.604-002
0.40	1.129-002	8.551-003	3.089-002	1.565-002	5.910-002
0.50	8.250-002	1.289-002	3.705-002	2.314-002	7.647-002
0.60	2.430-002	1.790-002	4.232-002	3.119-002	8.000-002
0.70	3.357-002	1.123-001	4.662-002	3.926-002	8.767-002
0.80	4.351-002	2.859-002	4.992-002	4.694-002	9.361-002
0.90	5.478-002	3.413-002	5.219-002	5.371-002	9.801-002
1.00	6.747-002	3.954-002	5.343-002	5.921-002	1.012-001
1.10	8.172-002	4.464-002	5.364-002	6.308-002	1.036-001
1.20	9.762-002	4.923-002	5.284-002	6.505-002	1.058-001
1.30	1.152-001	5.306-002	5.106-002	6.497-002	1.083-001
1.40	1.344-001	5.574-002	4.843-002	6.280-002	1.121-001
1.50	1.546-001	5.734-002	4.513-002	5.912-002	1.180-001
1.60	1.750-001	5.715-002	4.153-002	5.448-002	1.270-001
1.70	1.940-001	5.512-002	3.819-002	5.022-002	1.396-001
1.80	2.096-001	5.129-002	3.579-002	4.803-002	1.559-001
1.90	2.197-001	4.608-002	3.570-002	4.960-002	1.749-001
2.00	2.231-001	4.016-002	3.641-002	5.604-002	1.949-001
2.10	2.197-001	3.449-002	3.991-002	6.740-002	2.138-001
2.20	2.109-001	2.978-002	4.518-002	8.268-002	2.297-001
2.30	1.986-001	2.646-002	5.158-002	1.003-001	2.417-001
2.40	1.848-001	2.460-002	5.849-002	1.186-001	2.498-001
2.50	1.711-001	2.402-002	6.542-002	1.364-001	2.543-001
2.60	1.585-001	2.447-002	7.209-002	1.530-001	2.562-001
2.70	1.474-001	2.567-002	7.836-002	1.679-001	2.561-001
2.80	1.380-001	2.740-002	8.420-002	1.811-001	2.546-001
2.90	1.304-001	2.949-002	8.965-002	1.927-001	2.524-001
3.00	1.243-001	3.184-002	9.475-002	2.028-001	2.498-001
3.10	1.198-001	3.437-002	9.960-002	2.116-001	2.471-001
3.20	1.167-001	3.708-002	1.047-001	2.193-001	2.444-001
3.30	1.151-001	3.993-002	1.087-001	2.259-001	2.420-001
3.40	1.149-001	4.299-002	1.132-001	2.318-001	2.399-001
3.50	1.164-001	4.631-002	1.175-001	2.368-001	2.382-001
3.60	1.199-001	4.997-002	1.218-001	2.413-001	2.370-001
3.70	1.258-001	5.407-002	1.261-001	2.453-001	2.365-001
3.80	1.351-001	5.875-002	1.302-001	2.489-001	2.367-001
3.90	1.488-001	6.420-002	1.341-001	2.522-001	2.377-001
4.00	1.649-001	7.063-002	1.376-001	2.554-001	2.398-001
4.50	5.005-001	1.185-001	1.242-001	2.896-001	2.710-001
5.00	7.045-001	6.101-002	1.757-002	3.731-001	2.381-001
5.50	8.949-001	3.949-001	2.688-001	5.1505-002	2.4816-002
6.00	1.015-001	3.688-001	3.868-001	5.251-002	1.382-001
6.50	3.218-002	3.218-002	3.218-002	1.962-001	1.1

k_d	p_1^0	p_2^0	p_3^0	p_1^u	p_2^u	p_3^u
0.01	1.133-010	-2.250-003	1.007-010	-2.000-003	1.385-010	-2.750-003
0.05	7.061-008	-1.125-002	6.274-008	-9.993-003	8.625-018	-1.373-002
0.10	1.120-006	-2.248-002	9.944-007	-1.995-002	1.366-006	-2.738-002
0.15	5.591-006	-3.369-002	4.954-006	-2.982-002	6.797-006	-4.084-002
0.20	1.732-005	-4.486-002	1.531-005	-5.402-002	2.097-005	-5.402-002
0.30	8.273-005	-6.704-002	7.263-005	-5.857-002	9.896-005	-7.923-002
0.40	2.404-004	-8.897-002	2.090-004	-7.668-002	2.829-004	-1.026-001
0.50	5.240-004	-1.107-001	4.501-004	-9.367-002	6.039-004	-1.229-001
0.60	9.358-004	-1.321-001	7.925-004	-1.094-001	1.053-003	-1.402-001
0.70	1.423-003	-1.535-001	1.187-003	-1.237-001	1.561-003	-1.540-001
0.80	1.854-003	-1.749-001	1.524-003	-1.364-001	1.992-003	-1.639-001
0.90	1.993-003	-1.964-001	1.626-003	-1.475-001	2.144-003	-1.694-001
1.00	1.471-003	-2.182-001	1.248-003	-1.568-001	1.773-003	-1.701-001
1.10	-2.362-004	-2.404-001	8.107-005	-1.642-001	6.313-004	-1.656-001
1.20	3.831-003	-2.629-001	-2.224-003	-1.692-001	-1.460-003	-1.554-001
1.30	-1.019-002	-2.854-001	-6.009-003	-1.716-001	-8.508-003	-1.387-001
1.40	-2.030-002	-3.072-001	-1.152-002	-1.707-001	-4.208-003	-1.148-001
1.50	3.513-002	-3.271-001	-1.880-002	-1.657-001	-1.178-002	-8.326-002
1.60	-5.527-002	-3.433-001	-2.746-002	-1.557-001	-1.388-002	-4.367-002
1.70	-8.051-002	-3.633-001	-3.657-002	-1.399-001	-1.263-002	3.401-003
1.80	-1.093-001	-3.545-001	-4.467-002	-1.179-001	-6.062-003	5.622-002
1.90	-1.389-001	-3.434-001	-4.999-002	-9.048-002	7.125-003	1.117-001
2.00	-1.654-001	-3.256-001	-5.110-002	-5.912-002	2.675-002	1.661-001
2.10	-1.854-001	-2.971-001	-4.752-002	-2.612-002	5.089-002	2.159-001
2.20	-1.972-001	-2.632-001	-3.987-002	6.277-003	7.639-002	2.587-001
2.30	-2.005-001	-2.272-001	-2.960-002	3.649-002	9.996-002	2.941-001
2.40	-1.967-001	-1.919-001	-1.840-002	6.379-002	1.191-001	3.226-001
2.50	-1.878-001	-1.587-001	-7.733-003	8.814-002	3.655-001	3.655-001
2.60	-1.757-001	-1.284-001	-1.346-003	1.099-001	1.388-001	3.841-001
2.70	-1.620-001	-1.008-001	8.215-003	1.299-001	1.391-001	3.791-001
2.80	-1.479-001	-7.533-002	1.258-002	1.477-001	1.334-001	3.912-001
2.90	-1.343-001	-5.153-002	1.436-002	1.645-001	1.224-001	4.006-001
3.00	-1.216-001	-2.873-002	1.362-002	1.803-001	1.068-001	4.072-001
3.10	-1.102-001	-6.345-003	1.051-002	1.954-001	8.738-002	4.108-001
3.20	-1.004-001	1.621-002	5.248-003	2.098-001	6.473-002	4.112-001
3.30	-9.214-002	3.949-002	-1.924-003	2.237-001	3.956-002	4.081-001
3.40	-8.554-002	6.408-002	-1.072-002	2.371-001	1.251-002	4.010-001
3.50	-8.053-002	9.059-002	-2.080-002	2.500-001	-1.576-002	4.036-001
3.60	-7.697-002	1.197-001	-3.177-002	2.627-001	-4.465-002	3.735-001
3.70	-7.457-002	1.524-001	-4.317-002	2.752-001	-7.354-002	3.523-001
3.80	-7.281-002	1.896-001	-5.437-002	2.876-001	-1.019-001	3.256-001
3.90	-7.080-002					

Table A14a
Impedance Coefficients
 $T = 0.3 \quad H = 0.5$

k_a	Z_1	Z_2	Z_3	Z'_1	Z'_2	Z'_3
0.01	5.655-006	1.629-003	1.125-005	1.493-003	2.155-005	1.843-003
0.05	1.413-004	7.142-002	2.810-004	7.455-003	5.380-004	9.191-003
0.10	5.646-004	1.427-002	1.120-003	1.484-002	2.142-003	1.825-002
0.15	1.268-003	2.137-002	2.505-003	2.278-002	2.209-002	2.703-002
0.20	2.248-003	2.844-002	4.417-003	2.914-002	8.478-003	3.543-002
0.30	5.023-003	4.243-002	9.709-002	4.242-002	1.839-002	5.058-002
0.40	8.853-003	5.616-002	1.673-002	5.429-002	3.141-002	6.291-002
0.50	1.371-002	6.960-002	2.514-002	4.667-002	4.667-002	7.185-002
0.60	1.958-002	8.272-002	3.460-002	7.304-002	6.330-002	7.707-002
0.70	2.649-002	9.551-002	4.476-002	8.042-002	8.042-002	7.840-002
0.80	3.450-002	1.079-001	5.530-002	8.509-002	9.720-002	7.589-002
0.90	4.375-002	1.200-001	6.592-002	8.861-002	1.128-001	6.969-002
1.00	5.440-002	1.715-001	7.631-002	9.207-002	1.265-001	6.007-002
1.10	6.668-002	1.424-001	8.618-002	9.457-002	1.374-001	4.740-002
1.20	8.086-002	1.522-001	9.516-002	9.712-002	1.447-001	3.225-002
1.30	9.712-002	1.603-001	1.028-001	1.004-001	1.475-001	1.546-002
1.40	1.155-001	1.084-001	8.257-002	1.052-001	1.451-001	-1.791-003
1.50	1.358-001	1.681-001	1.114-001	1.369-001	-1.772-002	1.380-001
1.60	1.570-001	1.654-001	1.109-001	1.230-001	-3.000-002	1.260-001
1.70	1.774-001	1.570-001	1.065-001	1.046-001	-3.604-002	1.043-001
1.80	1.946-001	1.428-001	9.812-002	8.467-002	-3.374-002	7.345-002
1.90	2.060-001	1.242-001	8.683-002	6.704-002	-2.265-002	3.656-002
2.00	2.101-001	1.038-001	7.441-002	5.566-002	-4.570-003	-1.349-003
2.10	2.070-001	8.491-002	6.290-002	5.282-002	1.684-002	-3.495-002
2.20	1.983-001	6.990-002	5.380-002	5.851-002	3.759-002	-6.056-002
2.30	1.863-001	5.993-002	4.777-002	7.095-002	5.468-002	-7.699-002
2.40	1.732-001	5.494-002	4.469-002	8.768-002	6.666-002	-8.498-002
2.50	1.603-001	5.420-002	4.407-002	1.065-001	7.332-002	-8.627-002
2.60	1.485-001	5.680-002	4.530-002	1.257-001	7.515-002	-8.272-002
2.70	1.381-001	6.191-002	4.786-002	1.443-001	7.292-002	-7.592-002
2.80	1.292-001	6.888-002	5.135-002	1.616-001	6.737-002	-6.711-002
2.90	1.217-001	7.726-002	5.550-002	1.775-001	5.917-002	-5.712-002
3.00	1.155-001	8.677-002	6.017-002	1.917-001	4.860-002	-4.656-002
3.10	1.104-001	9.725-002	6.527-002	2.042-001	3.666-002	-3.580-002
3.20	1.064-001	1.086-001	7.081-002	2.151-001	2.301-002	-2.513-002
3.30	1.034-001	1.210-001	7.683-002	2.242-001	8.021-003	-1.473-002
3.40	1.013-001	1.343-001	8.342-002	2.316-001	-8.180-003	-4.765-003
3.50	1.003-001	1.484-001	9.070-002	2.372-001	-2.552-002	4.597-003
3.60	1.004-001	1.647-001	9.886-002	2.408-001	-4.392-002	1.316-002
3.70	1.018-001	1.822-001	1.081-001	2.421-001	-4.330-002	2.066-002
3.80	1.051-001	2.014-001	1.187-001	2.409-001	-8.354-002	2.672-002
3.90	1.106-001	2.228-001	1.308-001	2.368-001	-1.044-002	3.082-002
4.00	1.193-001	2.465-001	1.447-001	2.291-001	-1.257-001	3.221-002
4.50	2.666-001	3.836-001	2.369-001	1.207-001	-1.991-001	-4.796-002
5.00	5.924-001	2.175-001	1.844-001	5.314-002	-7.813-002	-2.399-002
						-3.222-003
						4.508-001
						-3.930-001
						4.761-002
						6.454-002
						8.218-002
						8.132-002
						8.772-002
						3.434-001
						1.511-001
						-5.450-002
						-1.045-001
						3.257-002
						-1.492-002
						3.693-002
						-1.662-004
						4.349-002
						1.513-002
						5.272-002
						3.107-002
						2.931-002
						-4.319-002
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
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						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
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						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
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						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
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						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
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						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002
						3.727-002
						-8.497-002
						3.276-002
						-7.096-002
						3.018-002
						-5.706-002
						2.657-002
						-1.270-001
						5.361-002
						-1.133-001
						4.406-002
						-9.911-002

Table A14b
Pressure Coefficients
 $T = 0.3 \quad H = 0.5$

k_d	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^{90}	ρ_2^{90}	ρ_3^{90}
0.01	1.586-010	-2.125-003	2.239-010	-3.000-003	2.145-010	-2.875-003
0.05	9.888-008	-1.062-002	1.595-007	-1.899-002	1.337-007	-1.436-002
0.10	1.569-006	-2.123-002	2.212-006	-2.991-002	2.117-006	-2.861-002
0.15	7.843-006	-3.182-002	1.103-005	-4.470-002	1.054-005	-4.264-002
0.20	2.434-005	-4.238-002	3.414-005	-5.930-002	3.256-005	-5.636-002
0.30	1.169-004	-6.338-002	1.627-004	-8.770-002	1.542-004	-8.244-002
0.40	3.428-004	-8.421-002	4.718-004	-1.147-001	4.436-004	-1.831-001
0.50	7.578-004	-1.049-001	1.028-003	-1.999-001	9.569-004	-1.268-001
0.60	1.384-003	-1.256-001	1.846-003	-1.632-001	1.697-003	-1.439-001
0.70	2.180-003	-1.464-001	2.853-003	-1.844-001	2.588-003	-1.570-001
0.80	3.014-003	-1.676-001	3.867-003	-2.033-001	3.466-003	-1.657-001
0.90	3.630-003	-1.893-001	4.578-003	-2.198-001	4.085-003	-1.695-001
1.00	3.609-003	-2.119-001	4.544-003	-2.738-001	4.145-003	-1.681-001
1.10	2.331-003	-2.355-001	3.195-003	-2.450-001	3.344-003	-1.669-001
1.20	-1.074-003	-2.602-001	-1.302-004	-2.530-001	1.476-003	-1.474-001
1.30	-7.745-003	-2.858-001	-6.110-003	-2.571-001	-1.438-003	-1.267-001
1.40	-1.904-002	-3.115-001	-1.528-002	-2.561-001	-4.953-003	-9.798-002
1.50	-3.636-002	-3.359-001	-2.777-002	-2.485-001	-7.985-003	-6.065-002
1.60	-6.067-002	-3.564-001	-4.289-002	-2.326-001	-8.679-003	-1.454-002
1.70	-9.174-002	-3.699-001	-5.882-002	-2.068-001	-4.580-003	3.929-002
1.80	-1.275-001	-3.726-001	-7.256-002	-1.705-001	6.631-003	9.806-002
1.90	-1.636-001	-3.625-001	-8.072-002	-1.253-001	2.593-002	1.574-001
2.00	-1.950-001	-3.398-001	-8.089-002	-7.441-002	5.195-002	2.124-001
2.10	-2.174-001	-3.077-001	-7.280-002	-2.238-002	8.111-002	2.594-001
2.20	-2.292-001	-2.709-001	-5.838-002	-2.706-002	1.090-001	2.971-001
2.30	-2.311-001	-2.335-001	-4.067-002	-7.179-002	1.320-001	3.262-001
2.40	-2.253-001	-1.985-001	-2.265-002	1.113-001	1.479-001	3.484-001
2.50	-2.145-001	-1.470-001	-6.550-003	1.462-001	1.560-001	3.655-001
2.60	-2.007-001	-1.393-001	6.268-003	1.773-001	1.565-001	3.788-001
2.70	-1.858-001	-1.148-001	1.514-002	2.056-001	1.502-001	3.890-001
2.80	-1.708-001	-9.294-002	1.985-002	2.319-001	1.378-001	3.966-001
2.90	-1.564-001	-7.294-002	2.048-002	2.566-001	1.203-001	4.013-001
3.00	-1.431-001	-5.413-002	1.726-002	2.802-001	9.857-002	4.030-001
3.10	-1.311-001	-3.589-002	1.053-002	3.028-001	7.344-002	4.014-001
3.20	-1.206-001	-1.768-002	6.614-004	3.246-001	4.585-002	3.959-001
3.30	-1.117-001	1.010-003	-1.191-002	3.457-001	1.592-002	3.863-001
3.40	-1.042-001	2.067-002	-2.670-002	3.661-001	-1.510-002	3.721-001
3.50	-9.828-002	4.179-002	-4.317-002	3.857-001	4.677-002	3.530-001
3.60	-9.367-002	6.491-002	-6.868-002	4.048-001	-7.849-002	3.287-001
3.70	-9.018-002	9.063-002	-7.849-002	4.233-001	-1.098-001	2.988-001
3.80	-8.745-002	1.196-001	-9.574-002	4.413-001	-1.401-001	2.633-001
3.90	-8.488-002	1.527-001	-1.114-001	4.588-001	-1.693-001	2.218-001
4.00	-8.155-002	1.907-001	-1.240-001	4.757-001	-1.970-001	1.742-001
4.50	-2.732-002	4.744-001	-7.572-002	5.178-001	-3.328-001	-1.467-001
5.00	5.215-001	5.291-001	1.067-001	1.605-001	-5.008-001	-3.838-001

k_d	$\mathcal{L}_1$	$\mathcal{L}_2$	$\mathcal{L}_3$	$\mathcal{L}_4$	$\mathcal{L}_5$	$\mathcal{L}_6$						
0.01	3.514-006	1.022-003	2.498-005	3.103-003	9.780-006	1.333-003	1.326-005	2.409-003	1.172-005	7.766-004	1.874-005	2.035-003
0.05	8.781-005	5.107-003	6.237-004	1.549-002	2.440-004	6.652-003	7.802-004	1.201-002	2.927-004	3.872-003	4.681-004	1.016-002
0.10	3.508-004	1.021-002	2.484-004	3.084-002	9.694-004	1.323-002	3.104-003	2.380-002	1.166-003	7.672-003	1.867-003	2.025-002
0.15	7.875-004	1.530-002	5.550-003	4.590-002	2.157-003	1.967-002	6.920-003	3.518-002	2.607-003	1.133-002	4.181-003	3.017-002
0.20	1.396-003	2.037-002	9.769-003	6.055-002	3.777-003	2.591-002	1.215-002	4.593-002	4.592-003	1.479-002	7.385-003	3.985-002
0.30	3.117-003	3.047-002	2.139-002	8.814-002	8.139-003	3.754-002	2.639-002	5.491-002	1.007-002	2.083-002	1.633-002	5.824-002
0.40	5.493-003	4.074-002	3.665-002	1.128-001	1.364-002	4.778-002	4.471-002	7.958-002	1.730-002	2.539-002	2.837-002	7.496-002
0.50	8.514-003	5.039-002	5.476-002	1.340-001	1.979-002	5.646-002	6.581-002	8.922-002	2.593-002	2.814-002	4.318-002	8.968-002
0.60	1.219-002	6.026-002	7.492-002	1.515-001	2.609-002	6.354-002	8.835-002	9.347-002	3.550-002	2.882-002	6.043-002	1.022-001
0.70	1.658-002	7.012-002	9.641-002	1.651-001	3.209-002	6.914-002	1.110-001	9.230-002	4.590-002	2.727-002	7.990-002	1.123-001
0.80	2.177-002	8.000-002	1.186-001	1.749-001	3.738-002	7.351-002	1.327-001	8.589-002	5.653-002	2.329-002	1.015-001	1.200-001
0.90	2.792-002	8.993-002	1.409-001	1.808-001	4.165-002	7.694-002	1.522-001	7.460-002	6.710-002	1.672-002	1.252-001	1.249-001
1.00	3.527-002	9.987-002	1.629-001	1.827-001	4.463-002	7.985-002	1.685-001	5.890-002	7.718-002	7.306-003	1.511-001	1.266-001
1.10	4.412-002	1.097-001	1.840-001	1.807-001	4.618-002	8.271-002	1.806-001	3.940-002	8.621-002	5.198-003	1.793-001	1.245-001
1.20	5.484-002	1.192-001	2.036-001	1.744-001	4.624-002	8.607-002	1.874-001	1.697-002	9.337-002	2.105-002	2.098-001	1.176-001
1.30	6.783-002	1.278-001	2.206-001	1.637-001	4.494-002	9.059-002	1.875-001	7.128-003	9.752-002	4.038-002	2.421-001	1.044-001
1.40	8.338-002	1.347-001	2.337-001	1.485-001	4.264-002	9.700-002	1.799-001	3.092-002	9.710-002	6.292-002	2.751-001	8.294-002
1.50	1.015-001	2.410-001	2.410-001	1.295-001	4.013-002	1.050-001	1.640-001	5.154-002	9.020-002	8.763-002	3.064-001	5.150-002
1.60	1.215-001	1.342-001	2.402-001	1.179-001	3.866-002	1.179-001	1.405-001	6.519-002	7.502-002	1.123-001	3.320-001	8.953-003
1.70	1.417-001	1.320-001	2.297-001	1.082-001	3.985-002	1.326-001	1.123-001	6.799-002	5.080-002	1.331-001	3.465-001	4.357-002
1.80	1.595-001	1.197-001	2.078-001	7.273-002	4.516-002	1.485-001	8.474-002	5.760-002	1.890-002	1.458-001	3.449-001	1.016-001
1.90	1.720-001	1.026-001	1.831-001	6.705-002	5.513-002	1.636-001	6.456-002	3.518-002	1.625-002	1.47		

k_d	ρ_1^0	ρ_2^0	ρ_3^0	p_1^{w0}	p_2^{w0}	p_3^{w0}
0.01	2.350-010	-1.875-003	6.266-010	-5.000-003	3.916-010	-3.125-003
0.05	1.465-007	-9.373-003	3.905-007	-2.438-002	2.449-007	-1.560-002
0.10	2.327-006	-1.874-002	6.192-006	-4.983-002	3.864-006	-3.106-002
0.15	1.163-005	-2.809-002	3.088-005	-7.443-002	1.924-005	-4.624-002
0.20	3.613-005	-3.741-002	9.559-005	-9.867-002	5.938-005	-6.100-002
0.30	1.741-004	-5.599-002	4.560-004	-1.456-001	2.811-004	-8.876-002
0.40	5.133-004	-7.429-002	1.327-003	-1.900-001	8.089-004	-1.134-001
0.50	1.146-003	-9.303-002	2.910-003	-2.312-001	1.750-003	-1.343-001
0.60	2.127-003	-1.118-001	5.288-003	-2.630-001	3.128-003	-1.506-001
0.70	3.439-003	-1.310-001	8.347-003	-3.032-001	4.846-003	-1.621-001
0.80	4.963-003	-1.511-001	1.173-002	-3.337-001	6.681-003	-1.681-001
0.90	6.434-003	-1.723-001	1.481-002	-3.605-001	8.302-003	-1.684-001
1.00	7.352-003	-1.951-001	1.666-002	-3.835-001	9.317-003	-1.624-001
1.10	7.115-003	-2.198-001	1.608-002	-4.022-001	9.358-003	-1.495-001
1.20	4.538-003	-2.468-001	1.162-002	-4.160-001	8.216-003	-1.292-001
1.30	-1.815-003	-2.759-001	1.761-003	-4.235-001	6.045-003	-1.005-001
1.40	-1.382-002	-3.065-001	-1.479-002	-4.224-001	3.622-003	-0.621-002
1.50	-3.349-002	-3.367-001	-3.841-002	-4.096-001	2.627-003	-1.505-002
1.60	-6.232-002	-3.633-001	-6.766-002	-3.810-001	5.705-003	4.162-002
1.70	-1.001-001	-3.817-001	-9.837-002	-3.333-001	1.593-002	1.049-001
1.80	-1.436-001	-3.870-001	-1.237-001	-2.659-002	3.537-002	1.699-001
1.90	-1.868-001	-3.769-001	-1.368-001	-1.828-001	6.336-002	2.304-001
2.00	-2.230-001	-3.527-001	-1.338-001	-9.189-002	9.590-002	2.810-001
2.10	-2.477-001	-3.195-001	-1.160-001	-2.027-003	1.272-001	3.194-001
2.20	-2.600-001	-2.830-001	-8.867-002	8.075-002	1.522-001	3.464-001
2.30	-2.617-001	-2.478-001	-5.789-002	1.541-001	1.681-001	3.645-001
2.40	-2.560-001	-2.165-001	-2.867-002	2.196-001	1.741-001	3.764-001
2.50	-2.457-001	-1.896-001	-4.190-003	2.760-001	1.709-001	3.837-001
2.60	-2.329-001	-1.671-001	1.399-002	3.281-001	1.597-001	3.874-001
2.70	-2.193-001	-1.482-001	2.535-002	3.765-001	1.419-001	3.877-001
2.80	-2.058-001	-1.320-001	3.004-002	4.225-001	1.198-001	3.844-001
2.90	-1.930-001	-1.178-001	2.856-002	4.668-001	3.772-001	3.772-001
3.00	-1.812-001	-1.050-001	2.144-002	5.099-001	6.132-002	3.654-001
3.10	-1.706-001	-9.284-002	1.012-002	5.519-001	2.868-001	3.486-001
3.20	-1.613-001	-8.092-002	-5.015-003	5.929-001	3.264-001	3.264-001
3.30	-1.533-001	-6.874-002	-2.270-002	6.327-001	-3.989-002	2.983-001
3.40	-1.464-001	-5.598-002	-4.173-002	6.711-001	-7.480-002	2.642-001
3.50	-1.405-001	-4.195-002	-6.084-002	7.076-001	-1.095-001	2.240-001
3.60	-1.354-001	-2.662-002	-7.871-002	7.416-001	-1.435-001	1.778-001
3.70	-1.308-001	-9.608-003	-9.406-002	7.721-001	-1.767-001	1.261-001
3.80	-1.263-001	9.267-003	-1.058-001	7.977-001	-2.089-002	6.955-002
3.90	-1.216-001	3.007-002	-1.130-001	8.174-001	-2.398-001	9.122-003
4.00	-1.156-001	5.272-002	-1.153-001	8.290-001	-2.691-001	5.398-002
4.10	-6.505-002	1.831-001	-7.295-002	7.285-001	-3.778-001	5.552-001
4.20	-1.772-002	3.356-001	-1.206-002	3.864-001	-3.118-001	-5.373-001
4.30	-5.009-002	-5.009-002	-5.009-002	-5.009-002	-5.009-002	-5.009-002

Table A16a
Impedance Coefficients
 $T = 0.05 \quad H = 1.0$

λ_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7
0.01	2.251-005	4.772-003	2.378-007	4.036-005	2.507-005	3.182-003	4.884-006
0.05	5.627-004	2.386-002	5.940-006	2.016-004	6.259-002	1.589-002	1.219-004
0.10	2.252-003	4.771-002	2.369-005	4.020-004	2.492-003	3.161-002	4.860-004
0.15	5.070-003	7.153-002	5.305-005	6.000-004	5.565-003	4.703-002	1.087-003
0.20	9.023-003	9.532-002	9.365-005	7.945-004	9.790-003	6.198-002	1.915-003
0.30	2.038-002	1.428-001	2.069-004	1.168-003	2.138-002	8.996-002	4.207-003
0.40	3.647-002	1.901-001	3.589-004	1.516-003	3.646-002	1.146-001	7.234-003
0.50	5.764-002	2.773-001	5.440-004	1.831-003	5.403-002	1.352-001	1.084-002
0.60	8.450-002	2.845-001	7.567-004	2.108-003	7.296-002	1.513-001	1.485-002
0.70	1.181-001	3.319-001	9.914-004	2.943-003	9.199-002	1.627-001	1.907-002
0.80	1.601-001	3.792-001	1.243-003	2.530-003	1.098-001	1.695-001	2.329-002
0.90	2.129-001	4.257-001	1.506-003	2.662-003	1.248-001	1.719-001	2.727-002
1.00	2.804-001	4.695-001	1.774-003	2.730-003	1.354-001	1.706-001	3.069-002
1.10	3.672-001	5.060-001	2.033-003	2.720-003	1.394-001	1.672-001	3.308-002
1.20	4.779-001	5.255-001	2.259-003	2.611-003	1.346-001	1.645-001	3.373-002
1.30	6.133-001	5.105-001	2.401-003	2.392-003	1.197-001	1.682-001	3.171-002
1.40	7.591-001	4.763-001	2.376-003	2.082-003	9.727-002	1.864-001	2.615-002
1.50	8.745-001	2.868-001	2.104-003	1.785-003	7.842-002	2.265-001	1.768-002
1.60	9.044-001	8.786-002	1.610-003	1.679-003	8.057-002	8.650-001	1.235-002
1.70	8.335-001	9.145-002	1.073-003	1.865-003	1.121-001	3.625-003	-4.716-003
1.80	7.050-001	-1.992-001	6.741-004	2.274-003	1.628-001	3.773-001	3.660-003
1.90	5.730-001	-2.357-001	4.600-004	2.755-003	2.176-001	3.928-001	7.085-003
2.00	4.640-001	-2.267-001	3.821-004	3.215-003	2.556-001	3.931-001	1.180-002
2.10	3.822-001	-1.949-001	3.806-004	3.622-003	3.061-001	3.848-001	1.651-002
2.20	3.230-001	-1.541-001	4.152-004	3.981-003	3.392-001	3.724-001	2.071-002
2.30	2.807-001	-1.107-001	4.632-004	4.306-003	3.664-001	3.581-001	2.422-002
2.40	2.505-001	-6.756-002	5.139-004	4.612-003	3.888-001	3.433-001	2.706-002
2.50	2.289-001	-2.560-002	5.627-004	4.894-003	4.076-001	3.286-001	2.929-002
2.60	2.136-001	1.521-002	6.083-004	5.168-003	4.234-001	3.141-001	3.101-002
2.70	2.029-001	5.530-002	6.513-004	5.439-003	4.369-001	3.001-001	3.226-002
2.80	1.960-001	9.530-002	6.932-004	5.712-003	4.484-001	2.867-001	3.313-002
2.90	1.921-001	1.360-001	7.359-004	5.989-003	4.582-001	2.737-001	3.366-002
3.00	1.911-001	1.782-001	7.818-004	6.275-003	4.666-001	2.612-001	3.390-002
3.10	1.930-001	2.230-001	8.139-004	6.569-003	4.738-001	2.493-001	3.389-002
3.20	1.982-001	2.715-001	8.954-004	6.876-003	4.799-001	2.379-001	3.366-002
3.30	2.075-001	3.253-001	9.707-004	7.195-003	4.850-001	2.270-001	3.323-002
3.40	2.225-001	3.862-001	1.065-003	7.530-003	4.893-001	2.166-001	3.262-002
3.50	2.454-001	4.568-001	1.186-003	7.842-003	4.927-001	2.067-001	3.185-002
3.60	2.812-001	5.403-001	1.345-003	8.252-003	4.954-001	1.974-001	3.091-002
3.70	3.370-001	6.410-001	1.560-003	8.640-003	4.973-001	1.887-001	2.976-002
3.80	4.277-001	7.638-001	1.859-003	9.043-003	4.987-001	1.808-001	2.834-002
3.90	5.821-001	9.110-001	2.291-003	9.439-003	4.996-001	1.739-001	2.647-002
4.00	8.572-001	1.067-000	2.938-003	9.760-003	5.004-001	1.683-001	2.369-002
4.50	1.154-000	-1.092-000	2.385-003	7.616-003	5.160-001	1.275-001	1.013-002
5.00	2.425-001	-5.047-001	2.326-003	1.017-002	5.001-001	9.789-002	1.342-002

k_L	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
-0.01	1.314-010	-4.875-003	1.381-010	-5.125-003	1.124-010	-4.875-003
-0.05	8.145-008	-2.438-002	8.556-008	-2.560-002	7.608-008	-2.437-002
-0.10	1.270-006	-7.879-002	1.300-007	-4.990-003	1.2714-006	-4.872-002
-0.15	6.147-006	-7.425-002	6.274-007	-7.466-003	6.134-006	-7.301-002
-0.20	1.818-005	-9.780-002	1.849-006	-9.920-003	1.932-005	-9.723-002
-0.30	7.613-005	-1.473-001	7.461-006	-1.474-002	9.687-005	-1.454-001
-0.40	1.551-004	-2.501-001	1.542-005	-1.940-002	3.025-004	-1.929-001
-0.50	1.287-004	-2.501-001	1.283-005	-2.388-002	7.287-004	-2.397-001
-0.60	-3.772-004	-3.049-001	-3.396-005	-2.817-002	1.491-003	-2.857-001
-0.70	-2.157-003	-3.636-001	-1.917-004	-3.226-002	2.730-003	-3.306-001
-0.80	-6.718-003	-4.277-001	-5.750-004	-3.616-002	4.617-003	-3.476-001
-0.90	-1.675-002	-4.993-001	-1.766-003	-3.986-002	7.361-003	-3.175-001
-1.00	-3.688-002	-5.801-001	-2.837-003	-4.326-002	1.121-002	-4.594-001
-1.10	-7.848-002	-6.709-001	-5.367-003	-4.618-002	1.645-002	-5.008-001
-1.20	-1.426-001	-7.687-001	-9.409-003	-4.808-002	2.328-002	-5.422-001
-1.30	-2.558-001	-8.611-001	-1.527-002	-4.795-002	3.147-002	-5.847-001
-1.40	-6.254-001	-9.177-001	-2.250-002	-4.411-002	3.975-002	-6.297-001
-1.50	-6.351-001	-8.919-001	-2.893-002	-4.509-002	4.516-002	-6.778-001
-1.60	-8.274-001	-7.559-001	-3.100-002	-2.168-002	4.435-002	-7.263-001
-1.70	-9.170-001	-5.475-001	-2.689-002	-7.775-003	3.719-002	-7.703-001
-1.80	-9.075-001	-3.426-001	-1.858-002	-2.936-003	2.726-002	-8.070-001
-1.90	-8.347-001	-1.866-001	-9.303-003	9.750-003	1.813-002	-8.370-001
-2.00	-7.403-001	-8.299-002	-1.041-003	1.383-002	4.982-001	-8.622-001
-2.10	-6.472-001	-1.799-002	5.620-003	1.648-002	6.319-003	-8.843-001
-2.20	-5.639-001	2.255-002	1.074-002	1.856-002	3.042-003	-9.039-001
-2.30	-4.920-001	4.865-002	1.453-002	2.052-002	8.465-004	-9.214-001
-2.40	-3.707-001	6.673-002	1.723-002	2.259-002	4.553-001	-9.366-001
-2.50	-3.785-001	8.077-002	1.901-002	2.488-002	4.876-001	-9.497-001
-2.60	-3.340-001	9.325-002	1.998-002	2.735-002	5.232-001	-9.603-001
-2.70	-2.959-001	1.058-001	2.025-002	3.006-002	5.606-001	-9.685-001
-2.80	-2.634-001	1.195-001	1.990-002	3.298-002	5.986-001	-9.740-001
-2.90	-2.356-001	1.352-001	1.898-002	3.607-002	6.359-001	-9.767-001
-3.00	-2.121-001	1.538-001	1.754-002	3.932-002	6.714-001	-9.764-001
-3.10	-1.923-001	1.760-001	1.564-002	4.271-002	7.042-001	-9.729-001
-3.20	-1.758-001	2.029-001	1.333-002	4.623-002	7.332-001	-9.661-001
-3.30	-1.623-001	2.356-001	1.067-002	4.989-002	7.575-001	-9.558-001
-3.40	-1.511-001	2.759-001	7.733-003	5.372-002	7.863-001	-9.417-001
-3.50	-1.414-001	3.265-001	4.619-003	5.777-002	8.176-001	-9.236-001
-3.60	-1.319-001	3.910-001	1.474-003	6.214-002	8.617-002	-9.011-001
-3.70	-1.179-001	4.753-001	-1.461-003	6.703-002	1.395-002	-8.739-001
-3.80	-9.324-002	5.884-001	-3.746-003	7.268-002	4.057-002	-8.419-001
-3.90	-3.999-00					

Table A17a
Impedance Coefficients
 $T = 0.1 \quad H = 1.0$

ω	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9
0.01	2.050-005	4.518-003	9.094-007	1.405-004	2.505-005	3.134-003	9.546-006	7.585-004	4.532-005
0.05	5.125-004	2.759-002	2.271-005	7.015-004	6.252-004	1.564-002	2.383-003	3.783-003	1.132-003
0.10	2.051-003	4.517-002	9.056-005	1.398-003	2.498-003	3.112-002	9.494-004	7.506-003	4.518-003
0.15	4.617-003	6.775-002	2.027-004	2.096-003	5.552-003	4.627-002	2.122-003	1.111-002	1.013-002
0.20	8.215-003	9.031-002	3.577-004	2.759-003	7.756-003	6.095-002	3.736-003	1.454-002	1.791-002
0.30	1.855-002	1.354-001	7.884-004	4.047-003	2.124-002	8.833-002	8.184-003	2.068-002	3.970-002
0.40	3.321-002	1.806-001	1.364-003	5.234-003	3.609-002	1.123-001	1.403-002	2.555-002	6.921-002
0.50	5.253-002	2.062-003	6.297-003	5.323-002	5.323-002	1.323-001	2.094-002	2.887-002	1.057-001
0.60	7.716-002	2.722-001	2.860-003	7.217-003	7.149-002	1.478-001	2.857-002	3.041-002	1.482-001
0.70	1.082-001	3.191-001	3.739-003	7.980-003	8.963-002	1.588-001	3.654-002	3.002-002	1.961-001
0.80	1.474-001	3.669-001	4.682-003	8.569-003	1.063-001	1.654-001	4.446-002	2.754-002	2.485-001
0.90	1.942-001	4.154-001	5.674-003	8.958-003	1.201-001	1.680-001	5.185-002	2.281-002	3.041-001
1.00	2.645-001	4.628-001	6.695-003	9.107-003	1.293-001	1.674-001	5.811-002	1.567-002	3.605-001
1.10	3.525-001	5.045-001	7.704-003	8.950-003	1.319-001	1.652-001	6.229-002	5.986-003	4.124-001
1.20	4.693-001	5.296-001	8.603-003	8.392-003	1.256-001	1.647-001	6.291-002	-6.035-003	4.482-001
1.30	6.172-001	5.166-001	9.173-003	7.353-003	1.096-001	1.720-001	5.786-002	-1.914-002	4.452-001
1.40	7.797-001	4.328-001	9.025-003	5.914-003	8.788-002	1.962-001	4.530-002	-2.973-002	3.692-001
1.50	9.022-001	2.583-001	7.781-003	4.577-003	7.489-002	2.435-001	2.684-002	-3.175-002	1.984-001
1.60	9.161-001	3.409-002	5.648-003	4.179-003	8.928-002	3.036-001	1.032-002	-2.168-002	-2.573-002
1.70	8.170-001	-1.491-001	3.538-003	5.053-003	1.328-001	3.526-001	3.853-003	-4.712-003	-2.099-001
1.80	6.711-001	-2.432-001	2.152-003	6.698-003	1.883-001	3.773-001	7.485-003	1.049-002	-3.036-001
1.90	5.360-001	-2.644-001	1.507-003	8.472-003	2.403-001	3.819-001	1.621-002	-2.000-002	-3.229-001
2.00	4.313-001	-2.458-001	1.331-003	1.008-002	2.833-001	3.751-001	2.595-002	-2.424-002	-3.018-001
2.10	3.556-001	-2.101-001	1.390-003	1.147-002	3.177-001	3.631-001	3.483-002	-2.483-002	-2.639-001
2.20	3.018-001	-1.689-001	1.549-003	1.268-002	3.453-001	3.493-001	4.729-002	-2.316-002	-2.217-001
2.30	2.635-001	-1.273-001	1.740-003	1.377-002	3.678-001	3.350-001	4.829-002	-2.012-002	-1.805-001
2.40	2.361-001	-8.714-002	1.933-003	1.481-002	3.865-001	3.211-001	5.298-002	1.630-002	-1.426-001
2.50	2.162-001	-4.875-002	2.119-003	1.577-002	4.023-001	3.076-001	5.654-002	1.208-002	-1.084-001
2.60	2.018-001	-1.191-002	2.299-003	1.672-002	4.158-001	2.947-001	5.914-002	7.665-003	-7.822-002
2.70	1.913-001	2.391-002	2.475-003	1.766-002	4.276-001	2.823-001	6.091-002	3.186-003	-5.164-002
2.80	1.839-001	5.933-002	2.656-003	1.861-002	4.378-001	2.705-001	6.197-002	-1.261-003	-2.842-002
2.90	1.789-001	9.505-002	2.849-003	1.958-002	4.467-001	2.591-001	6.242-002	-5.618-003	-8.253-003
3.00	1.763-001	1.318-001	3.064-003	2.059-002	4.546-001	2.481-001	6.232-002	-9.843-003	9.152-003
3.10	1.754-001	1.705-001	3.313-003	2.162-002	4.615-001	2.376-001	6.175-002	-1.391-002	2.403-002
3.20	1.777-001	2.121-001	3.608-003	2.270-002	4.675-001	2.274-001	6.076-002	-1.782-002	3.658-002
3.30	1.827-001	2.577-001	3.964-003	2.382-002	4.728-001	2.176-001	5.938-002	-2.155-002	4.694-002
3.40	1.915-001	3.087-001	4.401-003	2.499-002	4.773-001	2.062-001	5.764-002	-2.510-002	5.519-002
3.50	2.058-001	3.671-001	4.945-003	2.621-002	4.812-001	1.992-001	5.557-002	-2.850-002	6.130-002
3.60	2.283-001	4.353-001	5.629-003	2.747-002	4.845-001	1.905-001	5.314-002	-3.176-002	6.510-002
3.70	2.635-001	5.165-001	6.503-003	2.878-002	4.873-001	1.823-001	5.033-002	-3.491-002	6.610-002
3.80	3.195-001	6.147-001	7.645-003	3.011-002	4.896-001	1.746-001	4.706-002	-3.800-002	6.334-002
3.90	4.116-001	7.341-001	9.177-003	3.141-002	4.915-001	1.674-001	4.312-002	-4.106-002	5.463-002
4.00	5.697-001	8.749-001	1.129-002	3.254-002	4.932-001	1.609-001	3.812-002	-4.407-002	3.535-002
4.50	1.614-000	-8.462-001	1.278-002	2.082-002	5.058-001	1.194-001	1.146-002	-1.802-002	-2.200-001
5.00	2.878-001	-5.699-001	1.021-002	3.208-002	4.893-001	9.107-002	2.127-002	-1.833-002	-1.670-002

Table A17b

 $T = 0.1 \quad H = 1.0$

κ	p_1^0	p_2^0	p_3^0	$p_1^{u_0}$	$p_2^{u_0}$	$p_3^{u_0}$
0.01	2.378-010	-4.750-003	5.006-011	-1.000-003	2.628-010	-5.250-003
0.05	1.479-007	-2.375-002	3.111-008	-4.997-003	1.633-007	-2.622-002
0.10	2.327-006	-4.734-002	4.888-007	-9.978-003	2.563-006	-5.226-002
0.15	1.146-005	-7.134-002	2.399-006	-1.493-002	1.256-005	-2.794-002
0.20	3.478-005	-9.532-002	7.254-006	-1.983-002	3.791-005	-1.031-001
0.30	1.556-004	-1.437-001	3.207-005	-2.943-002	1.667-004	-1.511-001
0.40	6.012-004	-2.445-001	8.134-005	-3.871-002	4.210-004	-1.951-001
0.50	6.992-004	-2.445-001	4.762-002	7.176-004	7.176-004	-2.340-001
0.60	7.285-004	-2.988-001	1.443-004	-5.614-002	7.614-004	-2.666-001
0.70	-2.780-004	-3.577-001	-3.771-005	-6.429-002	-4.479-005	-2.925-001
0.80	-3.868-003	-4.229-001	-6.487-004	-7.210-002	-2.670-003	-3.099-001
0.90	-1.293-002	-4.971-001	-2.087-003	-7.959-002	-8.470-003	-3.173-001
1.00	-3.272-002	-5.828-001	-4.973-003	-8.662-002	-1.905-002	-3.120-001
1.10	7.233-002	-6.815-001	-1.021-002	-9.278-002	-3.566-002	-2.892-001
1.20	-1.448-001	-7.906-001	-1.893-002	-9.694-002	-5.742-002	-2.412-001
1.30	-2.768-001	-8.947-001	-3.199-002	-9.655-002	-7.729-002	-1.576-001
1.40	-4.768-001	-9.535-001	-4.818-002	-8.742-002	-7.499-002	-3.083-002
1.50	-7.700-001	-9.048-001	-6.156-002	-6.599-002	-1.896-002	-1.254-001
1.60	9.166-001	-7.234-001	-6.318-002	-3.574-002	1.037-001	2.644-001
1.70	9.866-001	-4.788-001	-5.071-002	-7.370-003	2.568-001	3.439-001
1.80	-9.428-001	-2.455-001	-3.112-002	-1.200-002	3.909-001	3.694-001
1.90	-8.440-001	-1.195-001	-1.172-002	2.306-002	4.863-001	3.714-001
2.00	-7.399-001	-2.055-002	4.390-003	2.930-002	5.474-001	3.720-001
2.10	-6.431-001	2.310-002	1.683-002	3.683-002	5.837-001	3.801-001
2.20	-5.599-001	5.141-002	2.610-002	3.703-002	6.026-001	3.975-001
2.30	-4.899-001	6.949-002	3.280-002	4.072-002	6.087-001	4.229-001
2.40	-4.311-001	8.128-002	3.741-002	4.484-002	6.046-001	4.547-001
2.50	-3.814-001	9.016-002	4.016-002	4.948-002	5.917-001	4.909-001
2.60	-3.391-001	9.817-002	4.161-002	5.464-002	5.708-001	5.298-001
2.70	-3.031-001	1.066-001	4.161-002	6.027-002	5.425-001	5.699-001
2.80	-2.724-001	1.163-001	4.040-002	6.632-002	5.072-001	6.097-001
2.90	-2.461-001	1.280-001	3.810-002	7.272-002	4.651-001	6.480-001
3.00	-2.239-001	1.423-001	3.490-002	7.942-002	4.166-001	6.838-001
3.10	-2.052-001	1.598-001	3.040-002	8.637-002	3.621-001	7.138-001
3.20	-1.894-001	1.813-001	2.562-002	9.354-002	3.021-001	7.432-001
3.30	-1.772-001	2.077-001	1.997-002	1.009-001	2.371-001	7.652-001
3.40	-1.671-001	2.411-001	1.378-002	1.778-001	1.678-001	7.808-001
3.50	-1.589-001	2.811-001	0.760-003	1.644-001	9.477-002	7.894-001
3.60	-1.517-001	3.326-001	6.407-004	1.247-001	1.883-002	7.901-001
3.70	-1.453-001	3.888-001	-5.706-003	1.336-001	-5.929-002	7.823-001
3.80	-1.305-001	4.859-001	-1.118-002	1.435-001	-1.389-001	7.649-001
3.90	-1.040-001	5.829-001	-1.469-001	1.569-001	-2.196-001	7.370-001
4.00	-0.414-002	7.625-001	-1.409-002	1.691-001	-3.018-001	6.949-001
4.10	1.465+000	1.523-002	5.396-002	2.746-002	-8.001-001	4.792-001
4.20	4.757+000	1.355-001	-6.234-002	2.415-002	9.404-001	1.207-001
4.30						
4.40						
4.50						
4.60						
4.70						
4.80						
4.90						
5.00						

Table A18a
Impedance Coefficients
 $T = 0.2$ $H = 1.0$

k_u	Z_1	L_2	L_3	L_4	L_5
0.01	1.684-005	3.334-006	4.662-004	2.521-005	3.061-003
0.05	4.210-004	8.376-005	2.328-003	6.289-004	1.528-002
0.10	1.684-003	3.317-004	4.681-003	2.501-003	3.038-002
0.15	3.790-003	6.013-002	7.411-003	5.577-003	4.513-002
0.20	6.741-003	1.307-003	9.130-003	9.771-003	5.938-002
0.30	1.521-002	2.869-003	1.335-002	2.115-002	8.579-002
0.40	2.304-002	4.937-003	4.937-002	3.566-002	1.081-001
0.50	4.306-002	7.422-003	2.057-002	5.215-002	1.764-001
0.60	6.360-002	1.024-002	2.366-002	6.936-002	1.421-001
0.70	8.960-002	2.902-001	2.581-002	8.607-002	1.525-001
0.80	1.231-001	1.333-002	1.333-002	2.859-002	1.589-001
0.90	1.674-001	2.016-002	2.870-002	1.010-001	1.589-001
1.00	2.288-001	2.386-002	2.899-002	1.129-001	1.620-001
1.10	3.164-001	2.765-002	2.816-002	1.201-001	1.627-001
1.20	4.354-001	3.121-002	2.574-002	1.208-001	1.628-001
1.30	5.989-001	3.360-002	2.119-002	1.132-001	1.660-001
1.40	7.856-001	3.288-002	1.476-002	9.694-002	1.792-001
1.50	9.163-001	2.719-002	9.867-003	1.912-002	1.122-001
1.60	9.017-001	1.814-002	8.033-003	7.891-002	2.671-001
1.70	7.672-001	1.043-002	1.235-002	1.125-001	3.229-001
1.80	6.089-001	6.191-003	1.880-002	1.677-001	3.544-001
1.90	4.793-001	4.622-003	2.504-002	3.603-001	3.603-001
2.00	3.857-001	4.460-003	3.039-002	2.645-001	3.523-001
2.10	3.202-001	4.920-003	3.492-002	2.970-001	3.396-001
2.20	2.762-001	5.621-003	3.889-002	3.219-001	3.259-001
2.30	2.414-001	6.399-003	4.253-002	3.418-001	3.127-001
2.40	2.175-001	7.199-003	4.595-002	3.581-001	3.004-001
2.50	1.995-001	8.018-003	4.926-002	3.721-001	2.891-001
2.60	1.858-001	8.868-003	5.252-002	3.843-001	2.785-001
2.70	1.751-001	9.776-003	5.580-002	3.951-001	2.686-001
2.80	1.666-001	1.077-002	5.911-002	4.049-001	2.591-001
2.90	1.599-001	1.190-002	6.250-002	4.138-001	2.501-001
3.00	1.545-001	1.319-002	6.596-002	4.220-001	2.413-001
3.10	1.506-001	1.468-002	6.951-002	4.295-001	2.328-001
3.20	1.480-001	1.643-002	7.317-002	4.364-001	2.245-001
3.30	1.471-001	1.847-002	7.680-002	4.428-001	2.163-001
3.40	1.481-001	2.088-002	8.052-002	4.486-001	2.083-001
3.50	1.518-001	2.371-002	8.425-002	4.538-001	2.003-001
3.60	1.591-001	2.728-001	8.794-002	4.586-001	1.924-001
3.70	1.717-001	3.093-002	9.150-002	4.629-001	1.846-001
3.80	1.922-001	3.4557-002	9.485-002	4.668-001	1.769-001
3.90	2.248-001	4.590-001	9.781-002	4.701-001	1.693-001
4.00	2.767-001	6.454-001	1.001-001	4.731-001	1.618-001
4.50	1.625-000	8.477-002	6.532-002	4.756-001	1.545-001
5.00	5.065-001	7.170-001	4.293-002	4.843-001	1.166-001
				4.689-002	8.708-002
				4.716-002	8.716-002
				4.793-002	8.793-002
				4.869-002	8.869-002
				4.945-002	8.945-002
				5.021-002	9.021-002

Table A18b
Pressure Coefficients
 $T = 0.2 \quad H = 1.0$

λ	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^{90}	ρ_2^{90}	ρ_3^{90}
0.01	4.519-010	-4.500-003	2.008-010	-2.000-003	5.523-010	-5.500-003
0.05	2.814-007	-2.750-002	1.250-007	-9.993-003	3.436-007	-2.746-002
0.10	4.454-006	-4.504-002	1.974-006	-1.995-002	5.422-006	-5.471-002
0.15	2.216-005	-6.763-002	9.780-006	-2.983-002	2.681-005	-8.151-002
0.20	6.816-005	-9.032-002	2.997-005	-3.959-002	8.199-005	-1.077-001
0.30	3.195-004	-1.762-001	1.386-004	-5.868-002	3.767-004	-1.573-001
0.40	8.993-004	-1.833-001	3.831-004	-7.704-002	1.032-003	-2.071-001
0.50	1.857-003	-2.325-001	7.728-004	-9.458-002	2.061-003	-2.409-001
0.60	3.001-003	-2.851-001	1.217-003	-1.113-001	3.223-003	-2.727-001
0.70	3.678-003	-2.431-001	1.458-003	-1.774-001	3.901-003	-2.964-001
0.80	2.391-003	-4.088-001	9.905-004	-1.429-001	3.030-003	-3.108-001
0.90	-3.897-003	-4.858-001	-1.069-003	-1.581-001	-9.415-004	-3.142-001
1.00	-2.108-002	-5.778-001	-6.171-003	-1.728-001	-9.894-003	-3.034-001
1.10	-6.040-002	-6.884-001	-1.658-002	-1.864-001	-2.534-002	-2.730-001
1.20	-1.420-001	-8.161-001	-3.545-002	-1.962-001	-4.607-002	-2.136-001
1.30	-2.966-001	-9.419-001	-6.550-002	-1.958-001	-6.194-002	-1.121-001
1.40	-5.463-001	-1.006-000	-1.035-001	-1.732-001	-4.394-002	-3.866-002
1.50	-8.424-001	-9.152-001	-1.313-001	-1.196-001	-4.846-002	-2.031-001
1.60	-1.041-000	-6.601-001	-1.251-001	-4.998-002	2.110-001	3.301-001
1.70	-1.062-000	-3.729-001	-8.812-002	5.490-003	3.754-001	3.708-001
1.80	-9.703-001	-1.622-001	-4.302-002	3.703-002	4.925-001	3.670-001
1.90	-8.475-001	-3.730-002	-3.972-003	5.267-002	5.621-001	3.577-001
2.00	-7.324-001	3.023-002	2.605-002	6.123-002	5.992-001	3.589-001
2.10	-6.350-001	6.522-002	4.820-002	6.769-002	6.156-001	3.731-001
2.20	-5.547-001	8.790-002	6.422-002	7.428-002	6.180-001	3.983-001
2.30	-4.886-001	9.165-002	7.542-002	8.184-002	6.098-001	4.315-001
2.40	-4.338-001	9.611-002	8.274-002	9.066-002	5.927-001	4.702-001
2.50	-3.877-001	9.884-002	8.684-002	1.007-001	5.675-001	5.121-001
2.60	-3.487-001	1.013-001	8.811-002	1.120-001	5.367-001	5.550-001
2.70	-3.155-001	1.045-001	8.685-002	1.242-001	4.945-001	5.975-001
2.80	-2.870-001	1.089-001	8.331-002	1.373-001	4.474-001	6.379-001
2.90	-2.627-001	1.151-001	7.770-002	1.511-001	3.935-001	6.751-001
3.00	-2.419-001	1.235-001	7.024-002	1.654-001	3.336-001	7.078-001
3.10	-2.244-001	1.345-001	6.114-002	1.802-001	2.676-001	7.350-001
3.20	-2.097-001	1.485-001	5.063-002	1.957-001	1.961-001	7.559-001
3.30	-1.976-001	1.661-001	3.898-002	2.104-001	1.203-001	7.696-001
3.40	-1.878-001	1.880-001	2.649-002	2.257-001	4.067-002	7.754-001
3.50	-1.800-001	2.152-001	1.353-002	2.411-001	-4.195-002	7.729-001
3.60	-1.737-001	2.488-001	5.225-004	2.565-001	-1.267-001	7.615-001
3.70	-1.680-001	2.907-001	-1.200-002	2.720-001	-2.125-001	7.409-001
3.80	-1.619-001	3.433-001	-2.335-002	2.876-001	-2.986-001	7.109-001
3.90	-1.529-001	4.101-001	-3.253-002	3.035-001	-3.840-001	6.712-001
4.00	-1.366-001	4.963-001	-3.808-002	3.199-001	-4.680-001	6.218-001
4.50	9.053-001	1.131-000	1.205-001	2.999-001	-8.823-001	2.620-001
5.00	7.096-001	-3.787-001	-1.115-001	1.999-002	-9.661-001	-1.081-001
						-2.254-001
						-1.016-000
						-9.346-001
						1.058-000
						1.455-001
						5.260-001
						7.455-001
						8.122-001
						8.526-001
						9.797-002
						4.730-001
						1.944-001
						2.883-002
						1.742-002
						1.933-002
						-5.059-002
						1.612-002
						1.612-002
						3.091-002
						5.812-002
						6.305-002
						2.994-001
						5.456-001
						1.912-001
						1.185-000
						1.902-001
						-1.201-000
						1.868-001
						-1.214-000
						1.811-001
						-1.223-000
						1.730-001
						-1.229-000
						1.626-001
						-1.230-001
						1.500-001
						-1.227-000
						1.353-001
						-1.220-000
						1.186-001
						-1.207-000
						9.974-002
						-1.189-000
						1.414-002
						-1.414-002
						8.398-001
						-1.414-002
						4.393-002
						-7.229-001

Table A19a
Impedance Coefficients
 $T = 0.3 \quad H = 1.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9			
0.01	1.398-005	3.562-003	6.920-006	9.075-004	2.545-005	3.002-003	2.654-005	1.874-003	3.758-005	2.331-003	1.960-005	2.068-003
0.05	3.469-004	1.781-002	1.728-004	4.531-003	6.348-004	1.498-002	6.623-004	9.339-003	9.385-004	1.162-002	4.896-004	1.033-002
0.10	1.387-003	3.563-002	6.879-004	9.022-003	2.522-005	2.977-002	2.634-003	1.849-002	3.741-003	2.301-002	1.954-003	2.058-002
0.15	3.121-003	5.548-002	1.536-003	1.743-003	5.611-003	4.620-002	5.871-003	2.727-002	8.369-003	3.397-002	4.379-003	3.069-002
0.20	5.548-003	7.138-002	2.703-003	1.773-002	9.820-003	5.808-002	1.030-002	3.552-002	1.476-002	4.429-002	7.744-003	4.060-002
0.30	1.250-002	1.074-001	5.910-003	2.584-002	2.114-002	8.368-002	2.236-002	4.980-002	3.251-002	6.224-002	1.719-002	5.958-002
0.40	2.234-002	1.441-001	1.012-002	3.316-002	3.541-002	1.057-001	3.785-002	6.034-002	5.621-002	7.550-002	3.007-002	7.720-002
0.50	3.535-002	1.818-001	1.514-002	3.956-002	5.135-002	1.236-001	5.572-002	6.649-002	8.505-002	8.295-002	4.626-002	9.328-002
0.60	5.212-002	2.212-001	2.079-002	4.496-002	6.770-002	1.374-001	7.469-002	6.788-002	1.183-001	8.350-002	6.580-002	1.078-001
0.70	7.379-002	2.632-001	2.694-002	4.933-002	8.323-002	1.472-001	9.433-002	6.426-002	1.554-001	7.589-002	8.909-002	1.206-001
0.80	1.023-001	3.087-001	3.354-002	5.261-002	9.676-002	1.536-001	1.131-001	5.544-002	1.960-001	5.829-002	1.170-001	1.316-001
0.90	1.412-001	3.584-001	4.060-002	5.465-002	1.071-001	1.572-001	1.301-001	4.109-002	2.391-001	2.777-002	1.511-001	1.400-001
1.00	1.961-001	4.122-001	4.816-002	5.512-002	1.129-001	1.591-001	1.437-001	2.070-002	2.831-001	2.048-002	1.936-001	1.441-001
1.10	2.765-001	4.673-001	5.616-002	5.334-002	1.125-001	1.614-001	1.514-001	-6.303-003	3.229-001	-9.389-002	2.479-001	1.394-001
1.20	3.962-001	5.121-001	6.403-002	4.810-002	1.045-001	1.679-001	1.484-001	-3.958-002	3.451-001	-2.020-001	3.161-001	1.163-001
1.30	5.672-001	5.156-001	6.966-002	3.782-002	8.955-002	1.860-001	1.271-001	-7.464-002	3.193-001	-3.485-001	3.932-001	5.668-002
1.40	7.698-001	4.193-001	6.812-002	2.275-002	7.731-002	2.250-001	8.159-002	-9.624-002	1.974-001	-5.027-001	4.505-001	-5.920-002
1.50	9.051-001	1.891-001	5.454-002	9.696-003	8.964-002	2.817-001	-2.610-002	-8.099-002	-2.911-002	-5.689-001	4.317-001	-2.134-001
1.60	8.705-001	-7.534-002	3.415-002	8.899-003	1.361-001	3.278-001	-2.428-003	-3.161-002	-2.491-001	-4.774-001	3.235-001	-3.262-001
1.70	7.196-001	-2.387-001	1.857-002	1.947-002	1.935-001	3.433-001	7.742-003	1.612-002	-3.536-001	-3.056-001	1.958-001	-3.539-001
1.80	5.626-001	-2.925-001	1.105-002	3.328-002	2.406-001	3.374-001	3.603-002	-4.240-002	-3.593-001	-1.535-001	1.014-001	-3.296-001
1.90	4.425-001	-2.878-001	8.778-003	4.585-002	2.745-001	3.240-001	6.538-002	5.036-002	-3.211-001	-1.844-002	4.297-002	-2.908-001
2.00	3.595-001	-2.607-001	9.017-003	5.646-002	2.989-001	3.698-001	8.994-002	4.744-002	-2.712-001	1.818-002	7.893-003	-2.535-001
2.10	3.095-001	-2.275-001	1.033-002	6.540-002	3.174-001	2.969-001	1.090-001	3.877-002	-2.221-001	5.900-002	-1.384-002	-2.217-001
2.20	2.597-001	-1.946-001	1.209-002	7.337-002	3.323-001	2.856-001	1.232-001	2.711-002	-1.777-001	8.319-002	-2.830-002	-1.953-001
2.30	2.302-001	-1.641-001	1.407-002	8.076-002	3.450-001	2.757-001	1.334-001	1.393-002	-1.387-001	9.640-002	-3.876-002	-1.730-001
2.40	2.082-001	-1.361-001	1.620-002	8.778-002	3.562-001	2.669-001	1.403-001	9.828-005	-1.048-001	1.022-001	-4.691-002	-1.537-001
2.50	1.911-001	-1.105-001	1.850-002	9.461-002	3.665-001	2.590-001	1.444-001	-1.398-002	-7.539-002	1.027-001	-5.371-002	-1.363-001
2.60	1.775-001	-8.672-002	2.103-002	1.014-001	3.761-001	2.516-001	1.461-001	-2.770-002	-5.001-002	9.949-002	-5.957-002	-1.200-001
2.70	1.661-001	-6.426-002	2.385-002	1.081-001	3.852-001	2.445-001	1.457-001	-4.114-002	-2.822-002	9.337-002	-6.467-002	-1.043-001
2.80	1.565-001	-4.258-002	2.705-002	1.149-001	3.938-001	2.377-001	1.434-001	-5.402-002	-9.714-003	8.507-002	-6.899-002	-8.874-002
2.90	1.481-001	-2.119-002	3.068-002	1.217-001	4.021-001	2.309-001	1.394-001	-6.622-002	5.763-002	7.510-002	-7.243-002	-7.289-002
3.00	1.407-001	3.928-004	3.484-002	1.285-001	4.099-001	2.242-001	1.339-001	-7.758-002	1.840-002	6.389-002	-7.479-002	-5.656-002
3.10	1.342-001	2.261-002	3.960-002	1.352-001	4.175-001	2.174-001	1.271-001	-8.799-002	2.833-002	5.177-002	-7.583-002	-3.958-002
3.20	1.287-001	4.588-002	4.501-002	1.418-001	4.246-001	2.104-001	1.190-001	-9.734-002	3.567-002	3.906-002	-7.526-002	-2.185-002
3.30	1.242-001	7.070-002	5.116-002	1.483-001	4.313-001	2.032-001	1.098-001	-1.055-001	4.053-002	2.604-002	-7.274-002	-3.350-003
3.40	1.209-001	9.746-002	5.810-002	1.544-001	4.376-001	1.959-001	9.962-002	-1.123-001	4.299-002	1.297-002	-6.789-002	1.588-002
3.50	1.192-001	1.267-001	6.588-002	1.601-001	4.434-001	1.883-001	8.870-002	-1.177-001	4.313-002	1.086-004	-6.028-002	3.574-002
3.60	1.195-001	1.589-001	7.452-002	1.651-001	4.487-001	1.806-001	7.717-002	-1.216-001	4.103-002	-1.230-002	-4.943-002	5.607-002
3.70	1.225-001	1.947-001	8.402-002	1.693-001	4.534-001	1.727-001	6.526-002	-1.239-001	3.678-002	-2.404-002	-3.476-002	7.659-002
3.80	1.260-001	2.340-001	9.436-002	1.726-001	4.575-001	1.646-001	5.317-002	-1.245-001	3.046-002	-3.486-002	-1.560-002	9.694-002
3.90	1.403-001	2.803-001	1.055-001	1.745-001	4.610-001	1.564-001	4.115-002	-1.233-001	2.212-002	-4.458-002	8.889-003	1.166-001
4.00	1.584-001	3.322-001	1.173-001	1.749-001	4.637-001	1.482-001	2.943-002	-1.205-001	1.178-002	-5.297-002	3.980-002	1.349-001
4.50	5.539-001	7.194-001	1.770-001	1.763-001	4.673-001	1.091-001	-1.624-002	-7.937-002	-7.770-002	-5.867-002	3.650-001	1.140-001
5.00	1.235-000	-6.846-001	8.693-002	1.100-001	4.533-001	8.088-002	2.193-002	-3.879-002	-2.565-002	1.075-001	-3.538-002	-6.203-001

Table A19b
Pressure Coefficients
 $T = 0.3 \quad H = 1.0$

k_{ω}	p_1^0	p_2^0	p_3^0	p_1^0	p_2^0	p_3^0
0.01	6.393-010	-4.250-003	4.513-010	8.649-010	-5.750-003	6.291-010
0.05	3.984-007	-2.125-002	2.810-007	5.384-007	-2.871-002	3.980-007
0.10	6.314-006	-4.253-002	4.444-006	8.050-006	-5.715-002	6.350-006
0.15	3.147-005	-6.387-002	2.207-005	4.215-005	-8.508-002	3.201-005
0.20	9.777-005	-8.530-002	6.786-005	1.293-004	-1.122-001	1.006-004
0.30	4.618-004	-1.287-001	3.175-004	6.005-004	-1.634-001	5.011-004
0.40	1.330-003	-1.733-001	8.958-004	1.677-003	-2.050-001	1.554-003
0.50	2.857-003	-2.201-001	1.975-003	3.468-003	-2.477-001	3.721-003
0.60	4.972-003	-2.707-001	3.162-003	5.777-003	-2.784-001	7.586-003
0.70	7.143-003	-3.271-001	4.394-003	7.975-003	-3.000-001	1.390-002
0.80	7.988-003	-3.922-001	4.796-003	8.915-003	-3.114-001	2.370-002
0.90	4.507-003	-4.701-001	2.973-003	6.907-003	-3.107-001	3.844-002
1.00	9.493-003	-5.659-001	3.459-003	1.058-004	-2.845-001	6.035-002
1.10	4.654-002	-6.847-001	-1.841-002	-1.375-002	-2.569-001	9.263-002
1.20	-1.309-001	-8.272-001	-4.771-002	-3.235-002	-1.872-001	1.392-001
1.30	-3.022-001	-9.720-001	-9.708-002	-4.295-002	-7.039-002	2.010-001
1.40	-5.917-001	-1.042-000	-1.609-001	-8.543-003	9.847-002	2.639-001
1.50	-9.277-001	-9.154-001	-2.028-001	1.161-001	-7.217-001	2.866-001
1.60	-1.118-000	-6.054-001	-1.816-001	3.033-001	3.705-001	2.409-001
1.70	-1.100-000	-2.976-001	-1.143-001	4.626-001	3.806-001	1.620-001
1.80	-9.799-001	-9.672-002	-4.301-002	5.580-001	3.617-001	9.243-002
1.90	-8.457-001	-1.188-002	1.433-002	6.051-001	3.510-001	4.259-002
2.00	-7.288-001	6.595-002	5.679-002	6.234-001	3.573-001	8.033-003
2.10	-6.334-001	9.133-002	8.745-002	6.243-001	3.785-001	-1.707-002
2.20	-5.563-001	1.022-001	1.094-001	6.133-001	4.105-001	-3.680-002
2.30	-4.935-001	1.058-001	1.246-001	5.928-001	4.497-001	-5.363-002
2.40	-4.416-001	1.062-001	1.342-001	5.639-001	4.929-001	-6.901-002
2.50	-3.982-001	1.053-001	1.391-001	5.272-001	5.377-001	-8.367-002
2.60	-3.614-001	1.043-001	1.401-001	4.828-001	5.819-001	-9.791-002
2.70	-3.300-001	1.041-001	1.374-001	4.312-001	6.237-001	-1.117-001
2.80	-3.031-001	1.051-001	1.316-001	3.726-001	6.617-001	-1.248-001
2.90	-2.799-001	1.076-001	1.228-001	3.074-001	6.945-001	-1.366-001
3.00	-2.601-001	1.120-001	1.116-001	2.360-001	7.210-001	-1.466-001
3.10	-2.430-001	1.185-001	9.821-002	2.824-001	7.403-001	-1.539-001
3.20	-2.285-001	1.278-001	8.311-002	1.592-001	7.514-001	-1.576-001
3.30	-2.161-001	1.395-001	6.673-002	-3.677-001	7.716-003	-1.566-001
3.40	-2.055-001	1.545-001	4.954-002	-9.608-002	7.871-001	-1.499-001
3.50	-1.963-001	1.733-001	3.208-002	-3.747-001	7.309-001	-1.360-001
3.60	-1.881-001	1.961-001	1.488-002	-2.772-001	7.051-001	-1.136-001
3.70	-1.809-001	2.237-001	-1.466-003	4.160-001	6.696-001	-8.120-002
3.80	-1.735-001	2.570-001	-1.633-002	4.343-001	6.248-001	-3.719-002
3.90	-1.655-001	2.969-001	-2.901-002	4.506-001	5.708-001	-2.034-002
4.00	-1.557-001	3.450-001	-3.869-002	4.645-001	5.081-001	-9.364-002
4.50	6.871-002	8.170-001	1.277-002	4.738-001	8.965-002	8.301-001
5.00	1.273+000	-1.899-002	-3.927-002	-4.027-002	-9.506-001	-3.314-001
						-7.618-002
						-1.715+000
						3.382-001
						1.630+000
						1.468+000
						8.056-001
						5.546-001
						1.326+000
						6.810-002
						9.543+000
						1.228-001
						-1.380+000
						1.495-001
						-1.393+000
						1.089+000
						3.885-001
						3.396-001
						9.979-001
						1.746-001
						-1.398+000
						1.973-001
						-1.396+000
						2.547-001
						8.081-001
						7.124-001
						2.337-001
						-1.373+000
						2.603-001
						-1.267+000
						2.567-001
						-1.231+000
						2.466-001
						-1.353+000
						1.872-001
						6.178-001
						5.254-001
						2.552-001
						-1.328+000
						2.598-001
						-1.299+000
						4.361-001
						2.598+000
						-1.299+000
						2.228-001
						-1.114+000
						2.376-001
						-1.154+000
						2.491-001
						-1.194+000
						8.168-002
						1.929-001
						3.840-002
						-6.144-002
						1.819-001
						-1.031+000
						2.038-001
						-1.073+000
						2.228-001
						-1.114+000
						2.376-001
						-1.154+000
						2.491-001
						-1.194+000
						3.083-002
						-1.124-001
						1.569-001
						-9.910-001
						3.303-002
						-8.622-001
						3.568-002
						-8.852-001
						9.837-002
						-9.163-001
						1.290-001
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						1.569-001
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						3.303-002
						-8.622-001
						3.568-002
						-8.852-001
						9.837-002
						-9.163-001
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						-9.522-001
						1.569-001
						-9.910-001
						3.303-002
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						1.290-001
						-9.522-001
						1.569-001
						-9.910-001
						3.303-002
						-8.622-001
						3.568-002
						-8.852-001
						9.837-002
						-9.163-001
						1.290-001
						-9.522-001
						1.569-001
						-9.910-001
						3.303-002
						-8.622-001
						3.568-002
						-8.852-001
						9.837-002
						-9.163-001
						1.290-001
						-9.522-001
						1.569-001
						-9.910-001
						3.303-002
						-8.622-001
						3.568-002

Table A20a
Impedance Coefficients
 $T = 0.5 \quad H = 1.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	9.350-006	2.802-003	1.667-005	1.992-003	2.603-005	2.905-003
0.05	2.337-004	1.401-002	4.160-004	9.942-003	6.491-004	1.649-002
0.10	9.340-004	2.804-002	1.654-003	1.978-002	2.575-003	2.877-002
0.15	2.099-003	4.211-002	3.687-003	2.941-002	5.712-003	4.264-002
0.20	3.726-003	5.624-002	6.469-003	3.873-002	9.961-003	5.592-002
0.30	8.366-003	8.483-002	1.404-002	5.619-002	2.123-002	8.011-002
0.40	1.490-002	1.142-001	2.784-002	7.169-002	3.510-002	1.005-001
0.50	2.353-002	1.448-001	3.531-002	8.501-002	5.016-002	1.169-001
0.60	3.471-002	1.774-001	4.802-002	9.613-002	6.508-002	1.293-001
0.70	4.934-002	2.130-001	6.173-002	1.051-001	7.870-002	1.383-001
0.80	6.908-002	2.528-001	7.638-002	1.119-001	9.003-002	1.447-001
0.90	9.686-002	2.980-001	9.219-002	1.163-001	9.816-002	1.493-001
1.00	1.379-001	3.498-001	1.095-001	1.175-001	1.022-001	1.536-001
1.10	2.015-001	4.071-001	1.286-001	1.140-001	1.010-001	1.596-001
1.20	3.030-001	4.623-001	1.488-001	1.024-001	9.441-002	1.712-001
1.30	4.606-001	4.875-001	1.653-001	7.757-002	8.479-002	1.949-001
1.40	6.655-001	4.184-001	1.647-001	3.806-002	8.392-002	2.371-001
1.50	8.164-001	2.055-001	1.310-001	2.027-003	1.121-001	2.873-001
1.60	7.950-001	-5.067-002	7.871-002	-3.648-004	1.666-001	3.142-001
1.70	6.597-001	-2.064-001	4.081-002	2.679-002	2.173-001	3.108-001
1.80	5.218-001	-2.598-001	2.396-002	6.090-002	2.511-001	2.953-001
1.90	4.182-001	-2.420-001	1.989-002	9.148-002	2.721-001	2.796-001
2.00	3.460-001	-2.457-001	2.198-002	1.798-001	2.863-001	2.672-001
2.10	2.955-001	-2.245-001	2.709-002	1.798-001	2.972-001	2.580-001
2.20	2.590-001	-2.035-001	3.196-002	1.598-001	3.066-001	2.512-001
2.30	2.315-001	-1.844-001	4.218-002	1.791-001	3.155-001	2.462-001
2.40	2.094-001	-1.674-001	5.174-002	1.955-001	3.244-001	2.423-001
2.50	1.914-001	-1.520-001	6.270-002	2.120-001	3.336-001	2.390-001
2.60	1.756-001	-1.378-001	7.516-002	2.275-001	3.431-001	2.359-001
2.70	1.612-001	-1.242-001	8.918-002	2.419-001	3.530-001	2.326-001
2.80	1.480-001	-1.109-001	1.048-001	2.550-001	3.631-001	2.289-001
2.90	1.356-001	-9.735-002	1.218-001	2.666-001	3.733-001	2.246-001
3.00	1.240-001	-8.325-002	1.402-001	2.764-001	3.834-001	2.196-001
3.10	1.133-001	-6.838-002	1.597-001	2.841-001	3.934-001	2.137-001
3.20	1.037-001	-5.262-002	1.801-001	2.896-001	4.028-001	2.070-001
3.30	9.518-002	-3.591-002	2.010-001	2.926-001	4.117-001	1.994-001
3.40	8.798-002	-1.827-002	2.220-001	2.931-001	4.197-001	1.912-001
3.50	8.219-002	2.498-004	2.428-001	2.911-001	4.268-001	1.823-001
3.60	7.786-002	1.955-002	2.629-001	2.899-001	4.328-001	1.730-001
3.70	7.500-002	3.959-002	2.819-001	2.797-001	4.377-001	1.634-001
3.80	7.359-002	6.037-002	2.995-001	2.707-001	4.415-001	1.538-001
3.90	7.161-002	8.192-002	3.154-001	2.599-001	4.441-001	1.442-001
4.00	7.502-002	1.044-001	3.292-001	2.476-001	4.457-001	1.350-001
4.50	1.074-001	2.435-001	3.664-001	1.748-001	4.423-001	9.668-002
5.00	2.432-001	5.174-001	3.471-001	1.002-001	4.300-001	7.315-002

Table A20b
Pressure Coefficients
 $T = 0.5 \quad H = 1.0$

k_u	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
0.01	9.385-010	-3.750-003	1.251-009	-5.000-003	1.564-009	-6.250-003
0.05	5.849-007	-1.475-002	7.793-007	-3.119-002	9.306-010	-3.750-003
0.10	9.277-006	-3.752-002	1.233-005	-6.204-002	5.854-007	-2.497-002
0.15	4.629-005	-5.633-002	6.126-005	-7.438-002	1.538-005	-6.204-002
0.20	1.433-004	-7.522-002	1.886-004	-9.457-002	7.827-005	-9.219-002
0.30	6.851-004	-1.134-001	8.866-004	-1.454-001	1.091-003	-1.755-001
0.40	1.990-003	-1.528-001	2.527-003	-2.224-001	3.072-003	-2.224-001
0.50	4.402-003	-1.944-001	5.400-003	-2.607-001	6.463-003	-2.607-001
0.60	8.010-003	-2.399-001	9.472-003	-2.713-001	1.114-002	-2.890-001
0.70	1.253-002	-2.915-001	1.421-002	-3.093-001	1.444-002	-3.064-001
0.80	1.691-002	-3.525-001	1.835-002	-3.465-001	2.110-002	-3.115-001
0.90	1.858-002	-4.274-001	1.954-002	-3.839-001	2.328-002	-3.024-001
1.00	1.179-002	-5.225-001	1.364-002	-4.223-001	2.087-002	-2.757-001
1.10	-1.598-002	-6.455-001	-6.471-003	-4.610-001	1.239-002	-2.251-001
1.20	-9.130-002	-8.011-001	-5.225-002	-4.943-001	3.247-004	-1.394-001
1.30	-2.631-001	-9.715-001	-1.372-001	-5.022-001	5.906-004	-3.263-003
1.40	-5.797-001	-1.069-000	-2.547-001	-4.389-001	5.715-002	-1.839-001
1.50	-9.617-001	-9.350-001	-3.323-001	-2.691-001	2.152-001	3.375-001
1.60	-1.167-000	-5.879-001	-2.866-001	-6.723-002	4.233-001	4.848-001
1.70	-1.135-000	-2.613-001	-1.616-001	6.411-002	5.564-001	4.047-001
1.80	-1.004-000	-6.099-002	-3.794-002	1.246-001	6.179-001	3.770-001
1.90	-8.672-001	4.259-002	5.776-002	1.513-001	6.323-001	3.706-001
2.00	-7.523-001	9.269-002	1.275-001	1.674-001	6.217-001	3.458-001
2.10	-6.602-001	1.156-001	1.777-001	1.826-001	5.964-001	4.164-001
2.20	-5.865-001	1.247-001	2.135-001	2.005-001	5.605-001	4.562-001
2.30	-5.267-001	1.270-001	2.384-001	2.220-001	5.157-001	5.006-001
2.40	-4.773-001	1.259-001	2.546-001	2.471-001	4.628-001	5.459-001
2.50	-4.360-001	1.234-001	2.634-001	2.756-001	4.020-001	5.893-001
2.60	-4.010-001	1.205-001	2.662-001	3.070-001	3.337-001	6.285-001
2.70	-3.709-001	1.180-001	2.635-001	3.409-001	2.584-001	6.616-001
2.80	-3.450-001	1.164-001	2.563-001	3.766-001	1.767-001	6.870-001
2.90	-3.223-001	1.159-001	2.453-001	4.135-001	8.915-002	7.035-001
3.00	-3.022-001	1.169-001	2.313-001	4.508-001	7.102-001	7.035-001
3.10	-2.843-001	1.195-001	2.149-001	4.878-001	5.203-003	7.035-001
3.20	-2.679-001	1.238-001	1.969-001	5.236-001	4.930-002	7.065-001
3.30	-2.526-001	1.298-001	1.776-001	5.573-001	-1.979-001	6.920-001
3.40	-2.381-001	1.375-001	1.578-001	5.879-001	6.666-001	6.666-001
3.50	-2.240-001	1.467-001	1.376-001	6.147-001	6.303-001	6.303-001
3.60	-2.102-001	1.572-001	1.174-001	6.369-001	5.835-001	5.835-001
3.70	-1.966-001	1.689-001	9.724-002	6.537-001	5.266-001	5.266-001
3.80	-1.832-001	1.816-001	7.733-002	6.646-001	4.602-001	4.602-001
3.90	-1.701-001	1.954-001	5.775-002	6.694-001	3.923-001	3.923-001
4.00	-1.576-001	2.102-001	3.855-002	6.679-001	-3.965-001	-3.965-001
4.50	-1.079-001	3.165-001	-4.124-002	5.707-001	6.018-001	6.018-001
5.00	-1.548-002	6.141-001	-2.529-002	3.358-001	-8.806-001	-8.806-001
					-9.741-001	-9.741-001
					-7.065-001	-7.065-001
					7.713-001	7.713-001
					5.588-001	5.588-001
					4.108-001	4.108-001
					3.850-001	3.850-001
					-1.516-001	-1.516-001
					-8.006-002	-8.006-002
					-3.700-001	-3.700-001
					-4.959-003	-4.959-003
					-3.382-001	-3.382-001
					2.116-001	2.116-001
					3.809-001	3.809-001
					3.078-001	3.078-001
					2.331-000	2.331-000
					2.452-000	2.452-000
					2.074-000	2.074-000
					-6.618-002	-6.618-002
					-7.659-002	-7.659-002
					-1.560-000	-1.560-000
					2.134-000	2.134-000
					2.183-000	2.183-000
					9.988-002	9.988-002
					-1.183-001	-1.183-001
					-4.842-002	-4.842-002
					-8.281-001	-8.281-001
					1.656-000	1.656-000
					-9.280-003	-9.280-003
					1.916-000	1.916-000
					2.002-000	2.002-000
					1.504-000	1.504-000
					1.383-000	1.383-000
					1.254-000	1.254-000
					1.816-000	1.816-000
					1.793-001	1.793-001
					1.722-000	1.722-000
					1.273-001	1.273-001
					1.754-001	1.754-001
					1.574-000	1.574-000
					2.214-001	2.214-001
					1.637-001	1.637-001
					2.633-001	2.633-001
					1.675-000	1.675-000
					2.214-001	2.214-001
					1.436-000	1.436-000
					8.641-001	8.641-001
					4.336-001	4.336-001
					5.260-001	5.260-001
					9.764-001	9.764-001
					3.280-001	3.280-001
					1.530-000	1.530-000
					3.483-001	3.483-001
					3.365-001	3.365-001
					2.213-001	2.213-001
					1.736-001	1.736-001
					1.328-001	1.328-001
					9.115-002	9.115-002
					4.307-001	4.307-001
					7.482-002	7.482-002
					9.160-001	9.160-001
					1.338-001	1.338-001
					4.493-001	4.493-001
					1.883-001	1.883-001
					2.364-001	2.364-001
					1.055-000	1.055-000
					2.775-001	2.775-001
					1.119-000	1.119-000
					3.110-001	3.110-001
					3.365-001	3.365-001
					3.534-001	3.534-001
					3.612-001	3.612-001
					3.595-001	3.595-001
					1.466-000	1.466-000
					1.436-000	1.436-000
					8.176-001	8.176-001
					4.336-001	4.336-001
					5.260-001	5.260-001
					9.764-001	9.764-001
					3.280-001	3.280-001
					1.530-000	1.530-000
					3.483-001	3.483-001
					3.365-001	3.365-001
					2.213-001	2.213-001
					1.736-001	1.736-001
					1.328-001	1.328-001
					9.115-002	9.115-002
					4.307-001	4.307-001
					7.482-002	7.482-002
					9.160-001	9.160-001
					1.338-001	1.338-001
					4.493-001	4.493-001
					1.883-001	1.883-001
					2.364-001	2.364-001
					1.055-000	1.055-000
					2.775-001	2.775-001
					1.119-000	1.119-000
					3.110-001	3.110-001
					3.365-001	3.365-001
					2.213-001	2.213-001
					1.736-001	1.736-001
					1.328-001	1.328-001
					9.115-002	9.115-002
					4.307-001	4.307-001
					7.482-002	7.482-002
					9.160-001	9.160-001
					1.338-001	1.338-001
					4.493-001	4.493-001
					1.883-001	1.883-001
					2.364-001	2.364-001
					1.055-000	1.055-000
					2.775-001	2.775-001
					1.119-000	1.119-000
					3.110-001	3.110-001
					3.365-001	3.365-001
					2.213-001	2.213-001
					1.736-001	1.736-001
					1.328-001	1.328-001
					9.115-002	9.115-002
					4.307-001	4.307-001
					7.482-002	7.482-002
					9.160-001	9.160-001
					1.338-001	1.338-001
					4.493-001	4.493-001
					1.883-001	1.883-001
					2.364-001	2.364-001
					1.055-000	1.055-000
					2.775-001	2.775-001
					1.119-000	1.119-000
					3.110-001	3.110-001
					3.365-001	3.365-001
					2.213-001	2.213-001
					1.736-001	1.736-001
					1.328-001	1.328-001
					9.115-002	9.115-002
					4.307-001	4.307-001
					7.482-002	7.482-002
					9.160-001	9.160-001
					1.338-001	1.338-001
					4.493-001	4.493-001
					1.883-001	1.883-001
					2.364-001	2.364-001
					1.055-000	1.055-000
					2.775-001	2.775-001
					1.119-000	1.119-000
					3.110-001	3.110-001
					3.365-001	3.365-001

Table A21a
Impedance Coefficients
 $T = 0.05 \quad H = 2.0$

k_a	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7
0.01	4.738-005	1.086-002	1.225-007	2.038-005	5.097-005	4.989-003	4.998-006
0.05	1.186-003	5.437-002	3.059-006	1.018-004	1.272-003	2.489-002	1.267-004
0.10	4.769-003	1.091-001	1.219-005	2.029-004	5.056-003	4.980-002	4.966-004
0.15	1.092-002	1.647-001	2.726-005	3.027-004	1.176-002	7.318-002	1.108-003
0.20	1.947-002	2.216-001	4.807-005	4.007-004	1.975-002	9.588-002	1.944-003
0.30	4.555-002	3.416-001	1.059-004	5.889-004	4.275-002	1.368-001	4.253-003
0.40	8.636-002	4.748-001	1.836-004	7.646-004	7.206-002	1.702-001	7.268-003
0.50	1.492-001	6.308-001	2.808-004	9.262-004	1.052-001	1.942-001	1.095-002
0.60	2.510-001	8.248-001	4.009-004	1.072-003	1.394-001	2.075-001	1.487-002
0.70	4.333-001	1.080-000	5.563-004	1.194-003	1.704-001	2.081-001	1.926-002
0.80	8.129-001	1.424-000	7.791-004	1.278-003	1.894-001	1.933-001	2.366-002
0.90	1.740-000	1.113-003	1.150-003	1.190-001	1.710-001	1.663-001	2.581-002
1.00	3.469-000	1.247-003	5.620-004	7.884-002	7.884-002	1.256-002	1.256-002
1.10	2.678-000	4.018-004	3.377-004	1.290-001	1.290-001	3.737-001	-5.605-003
1.20	1.196-000	5.001-005	8.475-004	2.550-001	3.936-001	-3.058-004	3.197-003
1.30	6.091-001	3.161-005	1.213-003	3.260-001	3.676-001	5.934-003	5.479-003
1.40	3.709-001	6.625-005	1.464-003	3.695-001	3.400-001	9.757-003	4.765-003
1.50	2.583-001	1.052-004	1.666-003	4.004-001	3.150-001	1.193-002	3.235-003
1.60	1.976-001	1.436-004	1.846-003	4.238-001	2.920-001	1.303-002	1.545-003
1.70	1.613-001	1.838-004	2.017-003	4.420-001	2.704-001	1.341-002	-5.356-005
1.80	1.372-001	2.290-004	2.182-003	4.560-001	2.501-001	1.327-002	-1.443-003
1.90	1.197-001	2.816-004	2.342-003	4.667-001	2.309-001	1.279-002	-2.567-003
2.00	1.058-001	3.431-004	2.497-003	4.744-001	2.129-001	1.210-002	-3.402-003
2.10	9.494-002	4.135-004	2.643-003	4.796-001	1.963-001	1.128-002	-3.949-003
2.20	8.356-002	4.917-004	2.779-003	4.827-001	1.811-001	1.044-002	-4.224-003
2.30	7.397-002	5.754-004	2.902-003	4.840-001	1.674-001	9.625-003	-4.261-003
2.40	6.511-002	6.613-004	3.011-003	4.839-001	1.553-001	8.901-003	-4.099-003
2.50	5.697-002	7.456-004	3.106-003	4.826-001	1.448-001	8.293-003	-3.778-003
2.60	4.957-002	8.263-004	3.186-003	4.805-001	1.358-001	7.825-003	-3.343-003
2.70	4.300-002	8.937-004	3.259-003	4.779-001	1.283-001	7.499-003	-2.839-003
2.80	3.777-002	9.512-004	3.323-003	4.750-001	1.222-001	7.317-003	-2.290-003
2.90	3.280-002	9.957-004	3.387-003	4.720-001	1.174-001	7.277-003	-1.722-003
3.00	2.847-002	1.028-003	3.454-003	4.691-001	1.139-001	7.376-003	-1.156-003
3.10	2.475-002	1.052-003	3.530-003	4.665-001	1.114-001	7.620-003	-6.077-004
3.20	2.163-002	1.072-003	3.617-003	4.642-001	1.098-001	8.017-003	-1.171-004
3.30	1.954-002	1.094-003	3.717-003	4.625-001	1.091-001	8.577-003	3.220-004
3.40	1.747-002	1.125-003	3.829-003	4.614-001	1.090-001	9.296-003	6.188-004
3.50	1.547-002	1.169-003	3.949-003	4.609-001	1.092-001	1.016-002	7.307-004
3.60	1.341-002	1.231-003	4.076-003	4.611-001	1.097-001	1.115-002	5.927-004
3.70	1.122-002	1.318-003	4.206-003	4.617-001	1.101-001	1.222-002	1.291-004
3.80	9.763-002	1.448-003	4.340-003	4.626-001	1.104-001	1.332-002	-7.798-004
3.90	8.636-002	1.672-003	4.478-003	4.633-001	1.104-001	1.443-002	-2.441-003
4.00	7.311-002	2.232-003	4.618-003	4.641-001	1.102-001	1.520-002	-6.203-003
4.10	6.091-002	1.162-003	4.747-003	4.648-001	1.092-001	1.655-002	-4.689-003
4.20	4.868-002	1.967-003	4.883-003	4.656-001	9.309-002	8.269-003	-8.502-003
4.30	3.648-002	2.779-003	5.026-003	4.664-001	7.368-004	1.527-002	-5.736-003
4.40	2.438-002	3.597-003	5.167-003	4.672-001	5.830-002	2.931-002	-4.330-002
4.50	1.222-002	4.420-003	5.308-003	4.679-001	4.688-002	1.777-002	-3.907-002
4.60	1.016-002	5.242-003	5.451-003	4.686-001	3.506-003	1.428-002	-2.970-002
4.70	8.868-002	6.063-003	5.592-003	4.694-001	2.010-002	1.233-002	-7.576-003
4.80	7.747-002	6.886-003	5.733-003	4.702-001	1.511-002	1.064-002	-5.881-003
4.90	6.625-002	7.663-003	5.874-003	4.710-001	1.005-002	9.679-003	-3.907-003
5.00	5.504-002	8.446-003	6.015-003	4.718-001	8.334-003	7.903-004	1.846-002
5.10	4.383-002	9.222-002	6.156-003	4.726-001	7.159-003	3.506-003	2.070-002
5.20	3.262-002	1.000-002	6.297-003	4.734-001	6.528-003	4.984-003	2.314-002
5.30	2.141-002	1.821-002	6.438-003	4.742-001	6.001-002	1.001-002	2.600-002
5.40	1.020-002	2.642-002	6.579-003	4.750-001	5.473-002	1.177-003	1.389-002
5.50	9.079-002	3.463-002	6.719-003	4.758-001	4.946-002	2.323-002	1.620-002
5.60	7.958-002	4.284-002	6.859-003	4.766-001	4.419-002	2.683-002	1.678-003
5.70	6.837-002	5.105-002	6.999-003	4.774-001	3.892-002	3.179-002	1.846-002
5.80	5.716-002	5.926-002	7.139-003	4.782-001	3.365-002	1.897-002	8.906-003
5.90	4.595-002	6.747-002	7.279-003	4.790-001	2.838-002	1.064-002	1.146-002
6.00	3.474-002	7.568-002	7.420-003	4.798-001	2.311-002	1.064-002	1.146-002
6.10	2.353-002	8.389-002	7.561-003	4.806-001	1.784-002	1.064-002	1.146-002
6.20	1.232-002	9.200-002	7.702-003	4.814-001	1.257-002	1.064-002	1.146-002
6.30	1.121-002	1.000-002	7.843-003	4.822-001	7.511-002	1.064-002	1.146-002
6.40	1.010-002	1.821-002	7.984-003	4.830-001	6.966-002	1.064-002	1.146-002
6.50	8.979-002	2.642-002	8.125-003	4.838-001	6.421-002	1.064-002	1.146-002
6.60	7.858-002	3.463-002	8.266-003	4.846-001	5.876-002	1.064-002	1.146-002
6.70	6.737-002	4.284-002	8.407-003	4.854-001	5.331-002	1.064-002	1.146-002
6.80	5.616-002	5.105-002	8.548-003	4.862-001	4.786-002	1.064-002	1.146-002
6.90	4.495-002	5.926-002	8.689-003	4.870-001	4.239-002	1.064-002	1.146-002
7.00	3.374-002	6.747-002	8.830-003	4.878-001	3.692-002	1.064-002	1.146-002
7.10	2.253-002	7.568-002	8.971-003	4.886-001	3.145-002	1.064-002	1.146-002
7.20	1.132-002	8.389-002	9.112-003	4.894-001	2.598-002	1.064-002	1.146-002
7.30	1.021-002	9.200-002	9.253-003	4.902-001	2.051-002	1.064-002	1.146-002
7.40	9.099-002	1.000-002	9.394-003	4.910-001	1.504-002	1.064-002	1.146-002
7.50	7.978-002	1.821-002	9.535-003	4.918-001	9.517-002	1.064-002	1.146-002
7.60	6.857-002	2.642-002	9.676-003	4.926-001	8.966-002	1.064-002	1.146-002
7.70	5.736-002	3.463-002	9.817-003	4.934-001	8.421-002	1.064-002	1.146-002
7.80	4.615-002	4.284-002	9.958-003	4.942-001	7.876-002	1.064-002	1.146-002
7.90	3.494-002	5.105-002	10.099-003	4.950-001	7.331-002	1.064-002	1.146-002
8.00	2.373-002	5.926-002	10.240-003	4.958-001	6.786-002	1.064-002	1.146-002
8.10	1.252-002	6.747-002	10.381-003	4.966-001	6.241-002	1.064-002	1.146-002
8.20	1.141-002	7.568-002	10.522-003	4.974-001	5.696-002	1.064-002	1.146-002
8.30	1.030-002	8.389-002	10.663-003	4.982-001	5.151-002	1.064-002	1.146-002
8.40	8.979-002	9.200-002	10.804-003	4.990-001	4.606-002	1.064-002	1.146-002
8.50	7.858-002	1.000-002	10.945-003	4.998-001	4.061-002	1.064-002	1.146-002
8.60	6.737-002	1.821-002	11.086-003	5.006-001	3.516-002	1.064-002	1.146-002
8.70	5.616-002	2.642-002	11.227-003	5.014-001	2.971-002	1.064-002	1.146-002
8.80	4.495-002	3.463-002	11.368-003	5.022-001	2.426-002	1.064-002	1.146-002
8.90	3.374-002	4.284-002	11.509-003	5.030-001	1.881-002	1.064-002	1.146-002
9.00	2.253-002	5.105-002	11.650-003	5.038-001	1.336-002	1.064-002	1.146-002
9.10	1.132-002	5.926-002	11.791-003	5.046-001	7.511-002	1.064-002	1.146-002
9.20	1.021-002	6.747-002	11.932-003	5.054-001	6.966-002	1.064-002	1.146-002
9.30	9.099-002	7.568-002	12.073-003	5.062-001	6.421-002	1.064-002	1.146-002
9.40	7.978-002	8.389-002	12.214-003	5.070-001	5.876-002	1.064-002	1.146-002
9.50	6.857-002	9.200-002	12.355-003	5.078-001	5.331-002	1.064-002	1.146-002
9.60	5.736-002	1.000-002	12.496-003	5.086-001	4.786-002	1.064-002	1.146-002
9.70	4.615-002	1.821-002	12.637-003	5.094-001	4.239-002	1.064-002	1.146-002
9.80	3.494-002	2.642-002	12.778-003	5.102-001	3.692-002	1.064-002	1.146-002
9.90	2.373-002	3.463-002	12.919-003	5.110-001	3.145-002	1.064-002	1.146-002
10.00	1.252-002	4.284-002	13.060-003	5.118-001	2.598-002	1.064-002	1.146-002

Table A21b
Pressure Coefficients
 $T = 0.05 \quad H = 2.0$

$k\alpha$	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
0.01	3.584-010	-9.751-003	1.838-011	-5.000-004	3.768-010	-5.119-002
0.05	2.187-007	-4.842-002	1.120-008	-2.499-003	2.295-007	-5.119-002
0.10	3.230-006	-9.804-002	1.647-007	-4.996-003	3.372-006	-1.020-001
0.15	1.405-005	-1.482-001	7.113-007	-7.487-003	1.455-005	-1.520-001
0.20	3.396-005	-1.994-001	1.704-006	-9.973-003	3.481-005	-2.010-001
0.30	1.176-005	-3.099-001	6.212-007	-1.494-002	1.525-005	-2.942-001
0.40	-7.675-004	-4.354-001	-3.499-005	-1.995-002	-6.684-004	-3.794-001
0.50	-4.921-003	-5.879-001	-2.126-004	-2.515-002	-3.957-003	-4.543-001
0.60	-2.066-002	-7.882-001	-8.215-004	-3.041-002	-1.455-002	-5.163-001
0.70	-7.358-002	-1.075+000	-2.621-003	-3.738-002	-4.283-002	-5.592-001
0.80	-2.526-001	-1.521+000	-7.780-003	-4.562-002	-1.104-001	-5.618-001
0.90	-9.062-001	-2.179+000	-2.288-002	-5.293-002	-2.425-001	-4.348-001
1.00	-2.810+000	-2.049+000	-5.329-002	-3.598-002	-2.040-001	5.541-002
1.10	-3.149+000	3.250-001	-3.750-002	7.732-003	4.727-001	2.223-001
1.20	-1.905+000	1.026+000	-7.715-003	9.199-003	7.675-001	-6.380-002
1.30	-1.225+000	9.527-001	5.704-003	2.000-003	8.441-001	-2.158-001
1.40	-8.811-001	9.059-001	1.254-002	-3.410-003	8.912-001	-2.709-001
1.50	-6.827-001	6.813-001	1.688-002	-6.928-003	9.382-001	-2.762-001
1.60	-5.537-001	5.853-001	2.005-002	-9.101-003	9.871-001	-2.519-001
1.70	-4.620-001	5.102-001	2.250-002	-1.029-002	1.036+000	-2.471-001
1.80	-3.923-001	4.509-001	2.441-002	-1.072-002	1.082+000	-2.466-001
1.90	-3.363-001	4.037-001	2.585-002	-1.052-002	1.122+000	-2.370-001
2.00	-2.897-001	3.657-001	2.682-002	-9.770-003	1.156+000	9.634-003
2.10	-2.497-001	3.351-001	2.733-002	-8.525-003	1.182+000	1.015-001
2.20	-2.148-001	3.106-001	2.773-002	-6.414-003	1.197+000	-2.007-001
2.30	-1.834-001	2.914-001	2.692-002	-4.661-003	1.201+000	3.054-001
2.40	-1.561-001	2.769-001	2.600-002	-2.078-003	1.192+000	4.146-001
2.50	-1.313-001	2.665-001	2.459-002	9.342-004	1.171+000	5.268-001
2.60	-1.090-001	2.602-001	2.273-002	4.371-003	1.137+000	6.405-001
2.70	-8.911-002	2.577-001	2.044-002	8.224-003	1.090+000	7.541-001
2.80	-7.158-002	2.590-001	1.779-002	1.250-002	1.020+000	8.665-001
2.90	-5.651-002	2.644-001	1.487-002	1.710-002	9.555-001	9.761-001
3.00	-4.416-002	2.743-001	1.178-002	2.225-002	8.700-001	1.081-000
3.10	-3.479-002	2.894-001	8.650-003	2.763-002	7.734-001	1.180+000
3.20	-2.877-002	3.113-001	5.592-003	3.321-002	6.666-001	1.271+000
3.30	-2.645-002	3.421-001	2.704-003	3.889-002	5.508-001	1.353+000
3.40	-2.832-002	3.951-001	4.737-005	6.454-002	4.273-001	1.423+000
3.50	-3.476-002	4.461-001	-2.351-003	5.007-002	2.973-001	1.479+000
3.60	-4.620-002	5.350-001	-6.468-003	5.551-002	1.621-001	1.521+000
3.70	-6.270-002	6.713-001	-6.208-003	6.106-002	2.365-002	1.545+000
3.80	-8.178-002	8.996-001	-7.214-003	6.729-002	-1.154-001	1.551+000
3.90	-8.224-002	1.348+000	-6.118-003	7.582-002	-2.492-002	1.575+000
4.00	1.746-001	2.556+000	5.065-003	9.210-002	3.267-001	1.474+000
4.50	2.782-001	-6.468-001	-3.379-002	5.064-002	-1.217+000	1.153+000
5.00	9.214-002	-1.473-001	-2.412-002	5.030-002	-1.743+000	3.974-001
						3.093-002
						9.596-001
						-1.934-002
						-1.231-001
						-3.638-002
						1.029+000
						-5.935-002
						2.819-003
						1.027-001
						-4.528-002
						7.969-001
						-3.839-002
						1.69-001
						-9.196-003
						-6.900-003
						1.296-001
						-3.080-002
						6.396-001
						-7.965-003
						1.618-001
						-4.386-003
						1.590-001
						-1.168-003
						1.431-001
						-4.977-001
						1.551+000
						-7.043-002
						4.977-001
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						1.551+000
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						-4.977-001
						1.551+000
						-7.043-002
						4.977-001
						-6.900-003
						1.296-001
						-3.080-002
						6.396-001
						-7.965-003
						1.618-001
						-4.386-003
						1.590-001
						-1.168-003
						1.431-001
						-4.977-001
						1.551+000

Table A22a
Impedance Coefficients
 $T = 0.1 \quad H = 2.0$

k_u	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9	Z_{10}	Z_{11}	Z_{12}	Z_{13}
0.01	4.251-005	1.031-002	4.752-007	7.147-005	5.262-005	5.075-003	1.000-005	6.018-004	9.460-005	5.141-003	8.990-006	8.998-004	4.997-003
0.05	1.064-003	5.161-002	1.186-005	3.569-004	1.313-003	2.531-002	2.997-004	2.997-003	2.364-003	2.563-002	2.247-004	4.497-003	4.997-003
0.10	4.276-003	1.036-001	4.724-005	7.111-004	5.216-003	5.072-002	9.927-004	5.919-003	9.445-003	5.075-002	8.988-004	4.988-002	4.988-002
0.15	9.693-003	1.564-001	1.055-004	1.060-003	1.160-002	7.434-002	2.213-003	8.693-003	3.762-002	7.490-002	2.022-003	1.344-002	1.344-002
0.20	1.742-002	2.105-001	1.856-004	1.401-003	2.031-002	9.733-002	3.844-003	1.125-002	3.762-002	9.758-002	3.597-003	1.742-002	1.742-002
0.30	4.064-002	3.246-001	4.067-004	2.053-003	4.376-002	1.386-001	8.435-003	1.548-002	8.430-002	1.367-001	8.131-003	2.669-002	2.669-002
0.40	7.677-002	4.521-001	7.009-004	2.655-003	7.334-002	1.720-001	1.433-002	1.818-002	1.498-001	1.645-001	1.467-002	3.553-002	3.553-002
0.50	1.323-001	6.023-001	1.064-003	3.204-003	1.064-001	1.961-001	2.122-002	1.900-002	2.362-002	1.761-001	2.372-002	4.474-002	4.474-002
0.60	2.223-001	7.910-001	1.507-003	3.638-003	1.400-001	2.098-001	2.887-002	1.755-002	3.490-001	1.641-001	3.659-002	5.486-002	5.486-002
0.70	3.848-001	1.045-000	2.078-003	4.128-003	1.701-001	2.116-001	3.709-002	1.306-002	5.002-001	1.101-001	5.649-002	6.649-002	6.649-002
0.80	7.304-001	1.401-000	2.903-003	4.417-003	1.888-001	1.995-001	4.542-002	3.496-003	7.089-001	-4.045-002	9.193-002	7.867-002	7.867-002
0.90	1.623-000	1.794-000	4.222-003	4.125-003	1.719-001	1.764-001	4.986-002	-1.671-002	9.480-001	-4.697-001	1.652-001	7.531-002	7.531-002
1.00	3.528-000	8.798-001	4.994-003	1.576-003	8.276-002	2.244-001	2.377-002	-4.562-002	5.566-001	-1.439-001	2.645-001	-4.897-002	-4.897-002
1.10	2.708-000	-1.722-000	1.509-003	4.928-004	1.514-001	3.842-001	-1.231-002	-1.595-002	-7.381-001	-1.090-000	1.254-001	-2.000-001	-2.000-001
1.20	1.154-000	-1.727-000	1.683-004	2.513-003	2.771-001	3.910-001	8.199-004	7.093-003	-7.532-001	-3.212-001	1.962-002	-1.522-001	-1.522-001
1.30	5.824-001	-1.311-000	1.371-004	3.858-003	3.410-001	3.598-001	1.317-002	9.982-003	-5.397-001	-3.856-002	-6.822-003	-1.074-001	-1.074-001
1.40	3.569-001	-1.010-000	2.862-004	4.759-003	3.798-001	3.317-001	2.022-002	7.742-003	-3.785-001	6.538-002	-1.399-002	-8.130-002	-8.130-002
1.50	2.509-001	-8.043-001	4.486-004	5.475-003	4.076-001	3.073-001	2.309-002	6.294-003	-2.655-001	1.047-001	-1.648-002	-6.514-002	-6.514-002
1.60	1.937-001	-6.577-001	6.127-004	6.112-003	4.291-001	2.852-001	2.568-002	7.416-004	-1.844-001	1.163-001	-1.785-002	-5.413-002	-5.413-002
1.70	1.590-001	-5.479-001	7.306-004	6.712-003	4.461-001	2.645-001	2.599-002	-2.503-003	-1.252-001	1.143-001	-1.903-002	-4.585-002	-4.585-002
1.80	1.356-001	-4.618-001	9.947-004	7.287-003	4.595-001	2.449-001	2.535-002	-5.247-003	-8.133-002	1.052-001	-2.024-002	-3.903-002	-3.903-002
1.90	1.182-001	-3.913-001	1.234-003	7.837-003	4.697-001	2.763-001	2.407-002	-7.396-003	-4.898-002	9.273-002	-2.144-002	-3.294-002	-3.294-002
2.00	1.041-001	-3.313-001	1.510-003	8.355-003	4.772-001	2.088-001	2.242-002	-8.923-003	-2.545-002	7.891-001	-2.251-002	-2.717-002	-2.717-002
2.10	9.189-002	-2.784-001	1.822-003	8.831-003	4.823-001	1.926-001	2.059-002	-9.834-003	-8.950-003	6.501-002	-2.333-002	-2.152-002	-2.152-002
2.20	8.093-002	-2.300-001	2.159-003	9.255-003	4.852-001	1.776-001	1.877-002	-1.019-002	2.185-003	5.204-002	-2.377-002	-1.590-002	-1.590-002
2.30	7.045-002	-1.845-001	2.511-003	9.620-003	4.864-001	1.642-001	1.708-002	-1.006-002	9.258-003	4.055-002	-2.371-002	-1.028-002	-1.028-002
2.40	6.153-002	-1.405-001	2.861-003	9.923-003	4.861-001	1.522-001	1.562-002	-9.553-003	1.338-002	3.087-002	-2.309-002	-4.712-002	-4.712-002
2.50	5.296-002	-9.708-002	3.191-003	1.017-002	4.847-001	1.419-001	1.445-002	-8.761-003	1.553-002	2.310-002	-2.186-002	7.504-004	7.504-004
2.60	4.519-002	-5.708-002	3.486-003	1.036-002	4.826-001	1.330-001	1.358-002	-7.780-003	1.653-002	1.718-002	-2.001-002	6.030-003	6.030-003
2.70	3.826-002	-4.723-003	3.731-003	1.055-002	4.798-001	1.257-001	1.302-002	-6.693-003	1.706-002	1.291-002	-1.756-002	1.105-002	1.105-002
2.80	3.225-002	3.769-002	3.919-003	1.064-002	4.768-001	1.198-001	1.276-002	-5.556-003	1.765-002	9.975-003	-1.454-002	1.574-002	1.574-002
2.90	2.721-002	4.664-002	4.047-003	1.080-002	4.737-001	1.152-001	1.277-002	-4.415-003	1.869-002	8.030-003	-1.101-002	2.005-002	2.005-002
3.00	2.325-002	1.391-001	4.124-003	1.098-002	4.708-001	1.118-001	1.307-002	-3.304-003	2.047-002	6.678-003	-7.051-003	2.395-002	2.395-002
3.10	2.048-002	1.963-001	4.164-003	1.120-002	4.681-001	1.096-001	1.364-002	-2.262-003	2.315-002	5.526-003	-2.747-003	2.746-002	2.746-002
3.20	1.911-002	2.599-001	4.186-003	1.147-002	4.658-001	1.082-001	1.451-002	-1.338-003	2.680-002	4.194-003	1.222-003	3.065-002	3.065-002
3.30	1.962-002	3.322-001	4.237-003	1.181-002	4.640-001	1.076-001	1.567-002	-6.032-004	3.153-002	2.348-003	6.609-002	3.368-002	3.368-002
3.40	2.189-002	4.168-001	4.312-003	1.219-002	4.629-001	1.076-001	1.712-002	-1.503-003	3.743-002	-3.729-004	1.164-002	3.679-002	3.679-002
3.50	2.737-002	5.189-001	4.437-003	1.260-002	4.624-001	1.080-001	1.879-002	-8.024-005	4.472-002	-4.613-003	1.706-002	4.035-002	4.035-002
3.60	3.766-002	6.477-001	4.623-003	1.308-002	4.624-001	1.086-001	2.062-002	-4.896-004	5.393-002	-1.040-002	2.325-002	4.487-002	4.487-002
3.70	5.560-002	9.192-001	4.879-003	1.348-002	4.630-001	1.093-001	2.249-002	-1.467-003	6.571-002	-1.960-002	3.096-002	5.117-002	5.117-002
3.80	9.014-002	1.065-000	5.232-003	1.394-002	4.640-001	1.106-001	2.427-002	-3.110-003	8.163-002	-3.440-002	4.183-002	6.067-002	6.067-002
3.90	1.658-001	2.208-000	5.752-003	1.441-002	4.652-001	1.100-001	2.583-002	-5.596-003	1.048-001	-6.061-002	5.981-002	7.623-002	7.623-002
4.00	3.813-001	2.208-000	6.658-003	1.481-002	4.662-001	1.113-001	2.693-002	-9.433-003	1.624-001	-1.163-001	9.755-002	1.048-001	1.048-001
4.10	1.964-001	-1.480-000	4.556-003	1.633-002	4.888-001	1.087-001	2.462-002	-1.172-002	-6.001-002	9.451-002	-5.330-002	-7.528-002	-7.528-002
4.20	2.918-002	-6.547-001	4.535-003	1.731-002	5.032-001	9.360-002	1.289-002	-1.846-002	6.666-002	1.972-002	-1.940-002	-1.067-002	-1.067-002

k_u	p^0	ρ_2^0	p_3^0	p_1^0	p_2^{u0}	p_3^{u0}
0.01	1.1009+009	-9.501+003	1.062+010	1.115+009	-1.050+002	6.897+007
0.05	6.252+007	-4.757+002	6.571+008	-5.243+002	-5.243+002	6.531+007
0.10	4.737+005	-9.554+002	1.019+006	-1.068+001	-1.044+001	1.030+005
0.15	4.270+005	-1.643+001	4.085+006	-1.113+005	-1.555+001	5.196+005
0.20	1.345+004	-1.945+001	1.424+005	-1.487+004	-2.053+001	1.610+004
0.30	5.473+004	-3.013+001	5.445+005	-5.684+004	-2.997+001	7.831+004
0.40	9.799+004	-4.229+001	9.441+005	-9.946+004	-3.963+002	2.335+003
0.50	-4.063+004	-5.709+001	-2.970+005	-9.345+005	-4.982+002	5.321+003
0.60	-1.025+002	-7.657+001	-8.134+004	-6.854+003	-5.176+001	1.022+002
0.70	-5.066+002	-1.048+000	-3.620+003	-2.885+002	-5.569+001	1.745+002
0.80	-2.027+001	-1.498+000	-1.249+002	-8.667+002	-5.564+001	2.712+002
0.90	-8.127+001	-2.213+000	-4.082+002	-2.081+001	-4.310+001	3.640+002
1.00	-3.253+000	-2.222+000	-1.067+001	-1.616+002	-2.322+001	2.035+002
1.10	-3.255+000	4.094+001	-7.304+002	5.597+001	2.003+001	1.254+002
1.20	-1.890+000	1.087+000	-1.239+002	8.151+001	-1.119+001	1.345+003
1.30	-1.202+000	9.757+001	1.357+002	8.704+001	-2.506+001	3.498+003
1.40	-8.640+001	8.156+001	2.688+002	9.104+001	-2.907+001	6.251+003
1.50	-6.706+001	6.870+001	3.507+002	9.553+001	-2.829+001	8.126+003
1.60	-5.451+001	5.888+001	4.123+002	1.004+000	-2.470+001	3.106+003
1.70	-4.555+001	5.130+001	4.598+002	1.052+000	-1.918+001	3.952+004
1.80	-3.870+001	4.532+001	4.965+002	1.097+000	-1.218+001	3.606+004
1.90	-3.317+001	4.054+001	5.273+002	1.137+000	-4.001+002	4.658+003
2.00	-2.857+001	3.465+001	5.405+002	1.169+000	5.128+002	1.459+003
2.10	-2.457+001	3.348+001	5.479+002	1.191+000	1.508+001	5.768+003
2.20	-2.109+001	3.089+001	5.456+002	1.202+000	2.566+001	6.934+003
2.30	-1.800+001	2.679+001	5.333+002	1.201+000	3.674+001	8.060+003
2.40	-1.525+001	2.713+001	5.117+002	1.187+000	4.816+001	9.044+003
2.50	-1.276+001	2.586+001	4.795+002	1.158+000	5.979+001	9.739+003
2.60	-1.053+001	2.495+001	4.386+002	1.116+000	7.147+001	1.003+002
2.70	-8.527+002	3.895+002	3.895+002	1.059+000	8.304+001	9.811+003
2.80	-6.751+002	2.412+001	3.333+002	9.846+001	9.436+001	2.696+001
2.90	-5.217+002	2.419+001	2.720+002	9.049+001	1.053+000	2.848+001
3.00	-3.952+002	2.462+001	2.077+002	8.087+001	1.156+000	2.973+001
3.10	-2.997+002	2.544+001	1.430+002	7.013+001	1.251+000	3.068+001
3.20	-2.400+002	3.678+001	8.012+003	5.839+001	1.337+000	3.128+001
3.30	-2.204+002	2.879+001	2.078+003	4.576+001	1.411+000	3.156+001
3.40	-1.142+002	9.863+001	3.825+003	3.238+001	1.471+000	3.130+001
3.50	-3.174+002	3.594+001	-8.512+003	1.837+001	-1.075+002	3.065+001
3.60	-4.410+002	4.204+001	-1.323+002	1.516+000	-2.220+002	2.953+001
3.70	-6.210+002	5.104+001	-1.759+002	1.544+000	-3.917+002	2.792+001
3.80	-8.604+002	6.499+001	-2.133+002	1.555+000	-6.408+00	

Table A2.3a
Impedance Coefficients
 $T = 0.2 \quad H = 2.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8
0.01	3.670-005	9.671-003	1.818-006	2.453-004	5.500-005	1.167-003	2.000-005	1.143-003
0.05	9.187-004	4.537-005	1.228-003	1.371-003	2.576-002	4.989-004	5.689-003	2.245-003
0.10	3.680-003	9.722-002	1.804-006	2.438-003	5.442-003	5.108-002	1.982-003	1.122-002
0.15	8.355-003	1.468-001	4.022-004	3.630-003	1.208-002	7.554-002	4.409-003	1.643-002
0.20	5.011-002	1.977-001	7.060-004	4.790-003	2.110-002	8.874-002	7.718-003	2.119-002
0.30	3.492-002	7.057-001	1.536-006	6.948-003	4.511-002	1.401-001	1.664-002	2.885-002
0.40	6.599-002	4.275-001	2.625-003	8.997-003	7.491-002	1.732-002	2.801-002	3.340-002
0.50	1.137-001	5.731-001	1.081-002	1.081-002	1.076-001	1.970-001	4.109-002	3.425-002
0.60	1.924-001	7.602-001	5.555-003	1.246-002	1.400-001	2.107-001	5.533-002	3.074-002
0.70	3.390-001	1.020-000	7.633-003	1.392-002	1.683-001	2.136-001	7.041-002	2.151-002
0.80	6.684-001	1.407-000	1.076-002	1.496-002	1.847-001	2.043-001	8.558-002	2.606-003
0.90	1.608-000	1.887-000	1.616-002	1.381-002	1.648-001	1.877-001	9.274-002	3.792-002
1.00	3.794-000	7.622-001	1.912-002	2.367-003	8.146-002	2.621-001	3.050-002	9.184-002
1.10	2.444-000	1.918-000	4.197-003	9.854-005	1.981-001	4.021-001	-2.442-002	-1.650-002
1.20	9.976-001	-1.680-000	4.343-004	7.737-003	3.059-001	3.769-001	9.093-003	1.629-002
1.30	5.140-001	-1.252-000	6.842-004	1.234-002	3.556-001	3.436-001	3.105-002	1.608-002
1.40	3.248-001	-9.663-001	1.368-003	1.542-002	3.872-001	3.177-001	4.238-002	9.352-003
1.50	2.367-001	-7.762-001	2.090-003	1.789-002	4.113-001	2.960-001	4.774-002	1.529-003
1.60	1.848-001	-6.420-001	2.860-003	2.011-002	4.310-001	2.763-001	4.939-002	-5.916-003
1.70	1.536-001	-5.422-001	3.734-003	2.218-002	4.472-001	2.575-001	4.853-002	-1.240-002
1.80	1.316-001	-4.643-001	4.756-003	2.411-002	4.604-001	2.394-001	4.597-002	-1.1761-002
1.90	1.145-001	-4.007-001	5.937-003	2.589-002	4.707-001	2.219-001	4.235-002	-2.142-002
2.00	1.000-001	-3.466-001	7.267-003	2.748-002	4.875-001	2.050-001	3.820-002	-2.381-002
2.10	8.716-002	-2.980-001	8.706-003	2.882-002	4.837-001	1.891-001	3.397-002	-2.486-002
2.20	7.544-002	-2.552-001	1.019-002	2.999-002	4.868-001	1.743-001	3.002-002	-2.475-002
2.30	6.466-002	-2.142-001	1.145-002	3.069-002	4.880-001	1.609-001	2.658-002	-2.373-002
2.40	5.477-002	-1.748-001	1.300-002	3.122-002	4.877-001	1.490-001	2.381-002	-2.205-002
2.50	4.580-002	-1.362-001	1.419-002	3.155-002	4.863-001	1.386-001	2.176-002	-1.995-002
2.60	3.776-002	-9.780-002	1.516-002	3.174-002	4.840-001	1.298-001	2.042-002	-1.764-002
2.70	3.086-002	-5.912-002	1.584-002	3.182-002	4.811-001	1.225-001	1.973-002	-1.527-002
2.80	2.448-002	-1.967-002	1.626-002	3.194-002	4.780-001	1.167-001	1.963-002	-1.295-002
2.90	1.924-002	2.107-002	1.643-002	3.218-002	4.748-001	1.122-001	2.007-002	-1.075-002
3.00	1.494-002	6.370-002	1.641-002	3.261-002	4.717-001	1.089-001	2.103-002	-8.707-003
3.10	1.168-002	1.089-001	1.628-002	3.330-002	4.690-001	1.066-001	2.250-002	-6.899-003
3.20	9.551-003	1.576-001	1.615-002	3.427-002	4.666-001	1.053-001	2.450-002	-5.427-003
3.30	8.730-003	2.108-001	1.612-002	3.550-002	4.647-001	1.047-001	2.701-002	-4.440-003
3.40	9.424-003	2.700-001	1.626-002	3.693-002	4.634-001	1.046-001	2.996-002	-4.113-003
3.50	1.190-002	3.372-001	1.663-002	3.851-002	4.627-001	1.050-001	3.318-002	-4.613-003
3.60	1.659-002	4.159-001	1.723-002	4.015-002	4.625-001	1.056-001	3.647-002	-6.059-003
3.70	2.440-002	5.106-001	1.808-002	4.184-002	4.628-001	1.065-001	3.956-002	-8.512-003
3.80	3.668-002	6.301-001	1.918-002	4.352-002	4.636-001	1.076-001	4.217-002	-1.197-002
3.90	5.736-002	7.891-001	2.061-002	4.521-002	4.649-001	1.087-001	4.404-002	-1.639-002
4.00	9.527-002	1.017-000	2.249-002	4.688-002	4.667-001	1.099-001	4.404-002	-2.174-002
4.50	1.883-000	-1.956-000	1.154-002	4.820-002	4.895-001	1.054-001	3.981-002	-2.060-002
5.00	4.646-002	-6.896-001	3.908-002	5.264-002	5.029-001	9.216-002	1.226-002	-3.849-002

λ_{μ}	p_1^0	p_2^0	p_3^0	p_1^{40}	p_2^{40}	p_3^{40}
0.01	1.812-009	-9.000-003	4.026-010	-2.000-003	2.214-009	-1.100-002
0.05	1.127-006	-4.506-002	2.500-007	-9.995-003	1.373-006	-5.491-002
0.10	1.774-005	-9.050-002	3.917-006	-1.996-002	2.151-005	-1.093-001
0.15	8.738-005	1.367-001	1.916-005	-2.988-002	1.049-004	-1.026-001
0.20	2.654-004	-1.862-001	5.749-005	-1.972-002	3.144-004	-2.143-001
0.30	1.185-003	-2.856-001	2.486-004	-5.922-002	1.350-003	-3.114-001
0.40	2.996-003	-4.014-001	6.004-004	-7.818-002	3.247-003	-3.974-001
0.50	4.622-003	-5.434-001	8.782-004	-9.860-002	4.836-003	-4.699-001
0.60	7.241-004	-7.366-001	1.971-006	-1.203-001	2.186-003	-5.263-001
0.70	-2.868-002	-1.018+000	-4.051-003	-1.461-001	-1.432-002	-5.607-001
0.80	-1.643-001	-1.490+000	-2.011-002	-1.797-001	-6.638-002	-5.528-001
0.90	-8.013-001	-2.299+000	-7.857-002	-2.190-001	-1.857-001	-4.080-001
1.00	-3.213+000	-2.194+000	-2.247-001	-1.431-001	-6.565-002	1.605-001
1.10	3.141+000	7.523-001	1.285-001	4.248-002	7.039-001	2.128-001
1.20	-1.721+000	1.160+000	-5.828-003	2.496-002	2.638-001	-1.792-001
1.30	-1.100+000	9.862-001	3.859-002	-6.997-003	8.963-001	-2.791-001
1.40	-7.968-001	8.162-001	6.170-002	-2.781-002	9.328-001	-2.902-001
1.50	-6.265-001	6.883-001	7.702-002	-4.085-002	9.783-001	-2.594-001
1.60	-5.122-001	5.925-001	9.483-002	-4.882-002	1.028+000	-2.037-001
1.70	-4.293-001	5.186-001	9.716-002	-5.310-002	1.076+000	-1.305-001
1.80	-3.650-001	4.598-001	1.036-001	-5.448-002	1.120+000	-4.401-002
1.90	-3.125-001	4.118-001	1.040-001	-5.323-002	1.157+000	-5.290-002
2.00	-2.683-001	3.717-001	1.103-001	-4.968-002	1.184+000	1.581-001
2.10	-2.300-001	3.378-001	1.104-001	-4.390-002	1.199+000	2.697-001
2.20	-1.970-001	3.098-001	1.086-001	-3.598-002	1.200+000	3.861-001
2.30	-1.677-001	2.846-001	1.048-001	-2.601-002	1.187+000	5.056-001
2.40	-1.416-001	2.640-001	9.899-002	-1.406-002	1.158+000	6.267-001
2.50	-1.179-001	2.469-001	9.176-002	-2.199-004	1.113+000	7.477-001
2.60	-9.654-002	2.328-001	8.201-002	1.564-001	1.052+000	8.670-001
2.70	-7.726-002	2.213-001	7.110-002	3.288-002	9.743-001	9.828-001
2.80	-6.000-002	2.123-001	5.890-002	5.200-002	8.854-001	1.093+000
2.90	-4.498-002	2.053-001	4.578-002	7.268-002	7.808-001	1.197+000
3.00	-3.255-002	2.006-001	3.220-002	9.471-002	6.636-001	1.291+000
3.10	-2.329-002	1.984-001	1.865-002	1.177-001	5.356-001	1.374+000
3.20	-1.776-002	1.993-001	5.599-003	4.110-001	3.981-001	1.444+000
3.30	-1.636-002	2.048-001	-6.687-003	1.641-001	2.529-001	1.498+000
3.40	-1.928-002	2.162-001	-1.815-002	1.611-001	1.013-001	1.536+000
3.50	-2.646-002	2.357-001	-2.895-002	2.667-001	-5.510-002	1.556+000
3.60	-3.763-002	2.657-001	-3.932-002	2.254-001	-2.150-001	1.532+000
3.70	-5.226-002	3.097-001	-4.944-002	2.624-001	-3.747-001	1.530+000
3.80	-7.133-002	3.732-001	-5.925-002	2.541-001	-5.385-001	1.486+000
3.90	-9.372-					

Table A24a
Impedance Coefficients
 $T = 0.3 \quad H = 2.0$

k_u	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9	Z_{10}	Z_{11}	Z_{12}	Z_{13}	Z_{14}	Z_{15}	Z_{16}	Z_{17}	Z_{18}	Z_{19}	Z_{20}
0.01	3.114-005	8.981-003	3.907-006	4.932-004	5.760-005	5.273-003	3.000-005	1.640-003	8.471-005	2.116-003	2.074-002	2.206-005	2.171-003							
0.05	7.793-004	4.496-002	9.746-005	2.462-003	1.436-003	2.629-002	7.441-004	8.160-003	2.074-002	5.512-004	5.512-004	5.512-004	1.085-002							
0.10	3.127-003	9.031-002	4.898-003	4.898-003	5.650-003	5.208-002	2.968-003	1.607-002	2.968-003	4.096-002	2.201-003	2.201-003	2.166-002							
0.15	7.075-003	1.764-001	8.612-004	7.244-003	1.261-002	7.693-002	6.591-003	2.347-002	1.889-002	6.013-002	4.937-003	3.241-002								
0.20	1.269-002	1.838-001	1.508-003	9.599-003	2.195-002	1.004-001	1.151-002	3.016-002	3.337-002	7.779-002	8.747-003	4.308-002								
0.30	2.942-002	2.847-001	3.258-003	1.396-002	4.662-002	1.420-001	2.464-002	4.066-002	7.401-002	1.068-001	1.958-002	6.430-002								
0.40	5.533-002	3.991-001	5.519-003	1.790-002	1.763-002	1.769-001	4.109-002	4.643-002	1.300-001	1.247-001	3.494-002	8.589-002								
0.50	9.534-002	5.374-001	8.228-003	2.146-002	1.991-001	1.985-001	5.968-002	4.675-002	2.025-001	1.278-001	5.599-002	1.092-001								
0.60	1.617-001	7.176-001	1.147-002	2.470-002	1.407-001	2.125-001	7.951-002	4.085-002	2.964-001	1.096-001	8.603-002	1.365-001								
0.70	2.874-001	9.741-001	1.564-002	2.769-002	1.676-001	2.168-001	1.001-001	2.701-002	4.231-001	5.358-002	1.339-001	1.716-001								
0.80	5.402-001	1.372-000	2.201-002	3.005-002	1.828-001	2.109-001	1.208-001	-1.301-004	6.034-001	-9.154-002	2.254-001	2.176-001								
0.90	1.483-000	1.938-000	3.385-002	2.939-002	1.637-001	2.897-001	1.302-001	-5.815-002	8.205-001	-5.243-001	4.467-001	2.401-001								
1.00	3.927-000	8.484-001	4.229-002	2.111-003	9.034-002	2.897-001	3.230-002	-1.361-001	2.020-001	1.545-000	8.114-001	-1.894-001								
1.10	2.366-000	-2.006-000	7.580-003	-2.455-003	2.351-001	4.054-001	-3.390-002	-1.150-002	-9.520-001	-6.714-001	2.574-001	-5.962-001								
1.20	9.201-001	-1.547-000	8.462-004	1.474-002	3.269-001	1.638-001	2.139-002	2.449-002	-6.812-001	-5.571-002	1.093-002	-4.034-001								
1.30	4.797-001	-1.212-000	1.854-003	2.419-002	3.665-001	3.306-001	5.113-002	1.842-002	-4.413-001	1.032-001	-3.927-002	-2.853-001								
1.40	3.094-001	-9.377-001	3.579-003	3.050-002	3.933-001	3.071-001	6.506-002	5.986-003	-2.916-001	1.481-001	-5.359-002	-2.205-001								
1.50	2.277-001	-7.582-001	5.427-003	3.541-002	4.151-001	2.877-001	7.050-002	-6.792-003	-1.924-001	1.562-001	-6.036-002	-1.803-001								
1.60	1.816-001	-6.331-001	7.483-003	4.017-002	4.338-001	2.699-001	7.069-002	-1.832-002	-1.229-001	1.490-001	-6.557-002	-1.517-001								
1.70	1.517-001	-5.407-001	9.869-003	4.433-002	4.499-001	2.526-001	6.737-002	-2.790-002	-7.283-002	1.344-001	-7.045-002	-1.290-001								
1.80	1.298-001	-4.489-001	1.264-002	4.807-002	4.633-001	2.354-001	6.175-002	-3.515-002	-3.688-002	1.163-001	-7.489-002	-1.090-001								
1.90	1.121-001	-4.105-001	1.578-002	5.131-002	4.740-001	2.193-001	5.487-002	-3.951-002	-1.173-002	9.680-002	-7.843-002	-9.035-002								
2.00	9.576-002	-3.408-001	1.918-002	5.494-002	4.821-001	2.015-001	4.761-002	-4.220-002	4.903-003	7.770-002	-8.056-002	-7.237-002								
2.10	8.297-002	-3.164-001	2.268-002	5.580-002	4.875-001	1.855-001	4.068-002	-6.248-002	1.493-002	6.013-002	-8.092-002	-5.497-002								
2.20	7.042-002	-2.765-001	2.409-002	5.717-002	4.906-001	1.705-001	3.461-002	-4.100-002	2.000-002	4.486-002	-7.930-002	-3.830-002								
2.30	5.906-002	-2.388-001	2.924-002	5.782-002	4.917-001	1.569-001	2.971-002	-3.830-002	2.159-002	3.225-002	-7.571-002	-2.262-002								
2.40	4.886-002	-2.024-001	3.195-002	5.797-002	4.912-001	1.448-001	2.609-002	-3.488-002	2.099-002	2.234-002	-7.028-002	-8.213-003								
2.50	3.982-002	-1.775-001	3.411-002	5.776-002	4.895-001	1.343-001	2.370-002	-3.112-002	1.920-002	1.920-002	-6.323-002	4.714-003								
2.60	3.190-002	-1.530-001	3.568-002	5.750-002	4.869-001	1.255-001	2.240-002	-2.737-002	1.700-002	9.610-003	-5.484-002	1.599-002								
2.70	2.501-002	-9.881-002	3.657-002	5.706-002	4.839-001	1.182-001	2.211-002	-2.372-002	1.492-002	5.931-003	-4.536-002	2.553-002								
2.80	1.910-002	-6.455-002	3.689-002	5.696-002	4.805-001	1.124-001	2.261-002	-2.035-002	1.329-002	3.395-003	-3.511-002	3.323-002								
2.90	1.410-002	-2.984-002	3.672-002	5.728-002	4.771-001	1.079-001	2.383-002	-1.731-002	1.221-002	1.541-003	-2.439-002	3.905-002								
3.00	1.001-002	-5.735-003	3.621-002	5.818-002	4.739-001	1.047-001	2.575-002	-1.463-002	1.167-002	-1.805-005	-1.357-002	4.299-002								
3.10	6.899-003	4.260-002	3.559-002	5.976-002	4.709-001	1.024-001	2.838-002	-1.242-002	1.154-002	-1.562-003	-3.056-003	4.517-002								
3.20	4.865-003	8.121-002	3.510-002	6.202-002	4.684-001	1.011-001	3.172-002	-1.085-002	1.164-002	-3.242-003	6.754-003	4.584-002								
3.30	4.074-003	1.221-001	3.495-002	6.490-002	4.663-001	1.005-001	3.571-002	-1.016-002	1.188-002	-5.105-003	1.554-002	4.544-002								
3.40	4.513-003	1.657-001	3.533-002	6.924-002	4.648-001	1.005-001	4.017-002	-1.061-002	1.208-002	-7.148-003	2.315-002	4.457-002								
3.50	6.371-003	2.130-001	3.633-002	7.198-002	4.637-001	1.009-001	4.480-002	-1.241-002	1.238-002	-9.397-003	2.969-002	4.389-002								
3.60	9.666-003	2.649-001	3.797-002	7.545-002	4.632-001	1.018-001	4.921-002	-1.568-002	1.279-002	-1.197-002	3.554-002	4.406-002								
3.70	1.452-002	3.234-001	4.026-002	7.943-002	4.632-001	1.020-001	5.298-002	-2.041-002	1.337-002	-1.510-002	4.131-002	4.564-002								
3.80	2.124-002	3.910-001	4.322-002	8.314-002	4.638-001	1.044-001	5.560-002	-2.646-002	1.404-002	-1.917-002	4.788-002	4.913-002								
3.90	3.061-002	4.717-001	4.690-002	8.647-002	4.651-001	1.061-001	5.671-002	-3.355-002	1.458-002	-2.467-002	5.644-002	5.498-002								
4.00	4.412-002	5.721-001	5.141-002	9.008-002	4.671-001	1.079-001	5.593-002	-4.134-002	1.438-002	-3.220-002	6.869-002	6.346-002								
4.50	8.589-001	2.528-000	9.107-002	8.297-002	4.901-001	1.107-001	1.366-002	-6.583-002	-8.771-002	-1.492-001	4.621-001	1.267-001								
5.00	1.413-001	-1.217-000	9.239-002	8.908-002	5.050-001	8.899-002	2.103-003	-5.315-002	4.696-002	3.486-002	-2.067-001	-4.453-002								

Table A24b
Pressure Coefficients
 $T = 0.3 \quad H = 2.0$

k_d	p_1^0	p_2^0	p_3^0	p_4^0	p_5^0	p_6^0	p_7^0	p_8^0	p_9^0	p_{10}^0	p_{11}^0	p_{12}^0	p_{13}^0
0.01	2.588-009	-4.500-003	9.127-010	-3.000-003	3.499-009	-1.150-002	2.513-009	-8.500-003	8.986-010	-3.000-003	3.400-009	-1.150-002	3.400-009
0.05	1.610-006	-4.255-002	5.673-007	-1.499-002	2.174-006	-5.739-002	1.589-006	-4.245-002	5.602-007	-1.497-002	2.146-006	-5.765-002	2.146-006
0.10	2.545-005	-8.546-002	8.922-006	-2.992-002	3.415-005	-1.141-001	2.535-005	-8.461-002	8.889-006	-2.974-002	3.402-005	-1.146-001	3.402-005
0.15	1.262-004	-1.291-001	4.387-005	-4.475-002	1.676-004	-1.696-001	1.277-004	-1.262-001	4.440-005	-4.412-002	1.696-004	-1.271-001	1.696-004
0.20	3.873-004	-1.739-001	1.311-004	-5.943-002	5.070-004	-2.232-001	4.011-004	-1.669-001	1.378-004	-5.793-002	5.248-004	-2.271-001	5.248-004
0.30	1.795-003	-2.694-001	5.959-004	-8.836-002	2.255-003	-3.228-001	2.003-003	-2.447-001	6.643-004	-8.313-002	2.507-003	-3.357-001	2.507-003
0.40	4.932-003	-3.788-001	1.558-003	-1.170-001	5.848-003	-4.094-001	6.280-003	-3.157-001	1.977-003	-1.041-001	7.346-003	-4.396-001	7.346-003
0.50	9.511-003	-5.139-001	2.819-003	-1.462-001	1.055-002	-4.806-001	1.548-002	-3.775-001	8.536-003	-1.198-001	1.641-002	-5.386-001	1.641-002
0.60	1.177-002	-6.968-001	3.268-003	-1.779-001	1.287-002	-5.334-001	3.360-002	-4.270-001	8.934-003	-1.293-001	3.085-002	-6.336-001	3.085-002
0.70	4.603-003	-9.731-001	5.952-004	-2.158-001	3.725-003	-5.622-001	6.958-002	-4.590-001	1.623-002	-1.319-001	5.172-002	-7.271-001	5.172-002
0.80	1.115-001	-1.447-000	2.033-002	-2.667-001	3.795-002	-5.474-001	1.490-001	-4.669-001	2.905-002	-1.275-001	7.919-002	-8.255-001	7.919-002
0.90	7.039-001	-2.126-000	1.029-001	-3.330-001	1.660-001	-3.949-001	3.622-001	-4.728-001	5.489-002	-1.218-001	1.046-001	-9.483-001	1.046-001
1.00	3.384-000	-2.325-000	3.441-001	-2.213-001	1.534-002	-2.091-001	7.832-001	-9.012-001	8.184-002	-1.580-001	3.016-002	-1.099-000	3.016-002
1.10	3.122-000	9.383-001	1.599-001	7.165-002	8.097-001	7.070-002	2.873-001	-1.430-000	1.709-002	-1.552-001	3.774-002	-1.037-000	3.774-002
1.20	1.641-000	1.213-000	7.795-003	2.755-002	9.042-001	-2.252-001	1.198-002	-1.311-000	2.177-003	-9.254-002	2.813-002	-1.041-000	2.813-002
1.30	1.047-000	1.003-000	6.925-002	-2.190-002	9.211-001	-2.793-001	-5.829-002	-1.230-000	5.342-003	-3.464-002	7.409-002	-1.082-000	7.409-002
1.40	7.632-001	8.266-001	1.017-001	5.285-002	9.565-001	-2.793-001	-8.661-002	-1.187-000	1.136-002	-2.539-002	1.034-001	-1.125-000	1.034-001
1.50	5.991-001	6.945-001	1.234-001	-7.224-002	9.997-001	-2.271-001	-1.854-001	-1.158-000	1.868-002	9.073-002	1.212-001	-1.165-000	1.212-001
1.60	4.898-001	6.034-001	1.395-001	-8.422-002	1.049-000	-1.522-001	-1.129-000	-1.129-000	2.753-002	6.618-001	1.296-001	-1.185-000	1.296-001
1.70	4.095-001	5.298-001	1.514-001	-9.076-002	1.096-000	-6.168-002	-1.383-001	-1.093-000	3.827-002	2.376-001	1.299-001	-1.196-000	1.299-001
1.80	3.465-001	4.704-001	1.597-001	-9.280-002	1.138-000	4.057-002	-1.527-001	-1.047-000	5.097-002	3.165-001	1.235-001	-1.193-000	1.235-001
1.90	2.950-001	4.208-001	1.645-001	-9.073-002	1.170-000	1.516-001	-1.639-001	-9.910-001	6.525-002	3.965-001	1.123-001	-1.173-000	1.123-001
2.00	2.517-001	3.784-001	1.659-001	-8.475-002	1.190-000	2.680-001	-1.701-001	-9.240-001	8.022-002	4.753-001	9.816-002	-1.136-000	9.816-002
2.10	2.148-001	3.416-001	1.642-001	-7.500-002	1.196-000	3.911-001	-1.702-001	-8.479-001	9.455-002	5.511-001	8.328-002	-1.083-000	8.328-002
2.20	1.830-001	3.096-001	1.595-001	-6.163-002	1.185-000	5.159-001	-1.636-001	-7.651-001	1.067-001	6.223-001	6.919-002	-1.015-000	6.919-002
2.30	1.552-001	2.818-001	1.520-001	-4.487-002	1.158-000	6.418-001	-1.505-001	-6.780-001	1.153-001	6.878-001	5.701-002	-9.346-001	5.701-002
2.40	1.306-001	2.578-001	1.419-001	-2.493-002	1.113-000	7.670-001	-1.320-001	-5.890-001	1.191-001	7.470-001	4.711-002	-8.431-001	4.711-002
2.50	1.045-001	2.370-001	1.292-001	-2.068-003	1.050-000	8.899-001	-1.095-001	-5.002-001	1.174-001	7.996-001	3.938-002	-7.429-001	3.938-002
2.60	8.853-002	2.191-001	1.142-001	2.353-002	9.697-001	1.008-000	-8.501-002	-4.132-001	1.100-001	8.456-001	3.334-002	-6.359-001	3.334-002
2.70	7.028-002	2.035-001	9.704-002	5.176-002	8.730-001	1.121-000	-6.049-002	-3.292-001	9.707-002	8.837-001	2.831-002	-5.238-001	2.831-002
2.80	5.376-002	1.898-001	7.811-002	8.278-002	7.611-001	1.225-000	-3.801-002	-2.488-001	7.959-002	9.143-001	2.357-002	-4.078-001	2.357-002
2.90	3.921-002	1.776-001	5.794-002	1.152-001	6.355-001	1.319-000	-1.950-002	-1.722-001	5.860-002	9.361-001	1.843-002	-2.894-001	1.843-002
3.00	2.714-002	1.667-001	3.718-002	1.499-001	4.980-001	1.400-000	-6.593-003	-9.908-002	3.526-002	9.476-001	1.220-002	-1.697-001	1.220-002
3.10	1.818-002	1.574-001	1.658-002	2.223-001	3.506-001	1.467-000	-6.394-004	-2.868-002	1.055-002	9.469-001	4.108-003	-4.975-002	4.108-003
3.20	1.295-002	1.503-001	3.208-003	2.223-001	1.516-000	1.516-000	-1.488-003	3.985-002	-1.508-002	9.317-001	-6.678-003	6.960-002	-6.678-003
3.30	1.183-002	1.464-001	2.177-002	2.580-001	1.547-000	1.547-000	-9.394-003	1.072-001	-4.185-002	8.999-001	-2.102-002	1.879-001	-2.102-002
3.40	1.484-002	1.472-001	3.903-002	2.921-001	1.556-000	1.556-000	-2.328-002	1.734-001	-7.060-002	8.498-001	-3.957-002	3.052-001	-3.957-002
3.50	2.160-002	1.538-001	5.522-002	3.238-001	1.543-001	1.543-001	-4.211-002	2.372-001	-1.026-001	7.803-001	-6.248-002	4.220-001	-6.248-002
3.60	1.151-002	1.678-001	7.064-002	3.525-001	1.507-000	1.507-000	-6.530-002	2.972-001	-1.391-001	6.913-001	-8.917-002	5.391-001	-8.917-002
3.70	4.390-002	1.905-001	8.550-002	3.743-001	1.444-000	1.444-000	-9.330-002	3.500-001	-1.815-001	5.832-001	-1.182-001	6.573-001	-1.182-001
3.80	5.811-002	2.236-001	9.966-002	4.014-001	1.366-000	1.366-000	-1.281-001	3.921-001	-2.311-001	4.571-001	-1.472-001	7.769-001	-1.472-001
3.90	7.357-002	2.499-001	1.126-001	4.223-001	1.261-000	1.261-000	-1.742-002	4.193-001	-2.893-002	3.146-001	-1.731-001	8.975-001	-1.731-001
4.00	8.954-002	3.335-001	-1.234-001	4.421-001	1.114-000	1.114-000	-2.393-001	4.272-001	-3.580-001	1.572-001	-1.924-001	1.018-000	-1.924-001
4.10	1.334-001	1.735-000	-3.244-002	5.038-001	-1.734-000	-1.734-000	-2.222-001	2.222-001	-9.214-001	-5.549-001	-6.391-002	1.461-000	-6.391-002
4.20	1.644-001	-6.731-001	-1.894-001	2.875-001	-1.805-000	-1.805-000	-7.314-001	1.045-000	-1.019-000	-1.5408-000	-4.620-003	1.398-000	-4.620-003

Table A25a
Impedance Coefficients
 $T = 0.5 \quad H = 2.0$

k_d	L_1	L_2	L_3	Z_1	Z_2	Z_3	L_4
0.01	2.237-005	7.496-003	9.995-004	1.066	1.148-003	6.253-005	5.447-003
0.05	5.595-004	3.453-002	2.491-004	5.727-003	2.714-002	1.557-003	2.571-002
0.10	2.242-003	7.741-002	9.875-004	1.138-002	5.371-002	1.266-002	1.867-003
0.15	5.052-003	1.170-001	2.189-003	1.689-002	7.916-002	1.091-002	3.601-002
0.20	9.043-003	1.577-001	3.814-003	2.220-002	2.356-002	1.030-001	1.896-002
0.30	2.080-002	2.447-001	8.136-003	3.208-002	4.939-002	1.647-001	6.007-002
0.40	3.880-002	3.440-001	1.357-002	4.090-002	8.003-002	1.772-001	6.577-002
0.50	6.640-002	4.652-001	1.988-002	4.880-002	1.119-001	2.002-001	9.380-002
0.60	1.123-001	6.250-001	2.722-002	5.610-002	1.420-001	2.147-001	1.226-001
0.70	2.003-001	8.568-001	3.651-002	6.315-002	2.214-001	1.512-001	3.218-002
0.80	4.108-001	1.231+000	5.062-002	6.975-002	2.216-001	1.786-001	8.147-003
0.90	1.106+000	1.865+000	7.847-002	7.023-002	2.220-001	1.920-001	8.966-002
1.00	3.710+000	1.420+000	1.155-001	9.986-003	3.094-001	1.718-001	2.184-001
1.10	2.470+000	-1.999+000	1.950-002	-1.460-002	4.002-001	-5.291-002	-5.870-003
1.20	9.045-001	-1.612+000	2.249-003	3.131-002	3.468-001	4.791-002	3.382-002
1.30	4.723-001	-1.172+000	6.597-003	5.574-002	3.743-001	9.078-002	1.250-002
1.40	3.098-001	-9.096-001	1.283-002	7.173-002	2.947-001	1.365-001	-1.335-002
1.50	2.310-001	-7.433-001	1.984-002	8.438-002	2.797-001	1.844-001	-3.687-002
1.60	1.849-001	-6.300-001	2.791-002	9.502-002	2.651-001	1.018-001	-5.621-002
1.70	1.531-001	-5.475-001	3.714-002	1.038-001	2.497-001	8.991-002	-7.035-002
1.80	1.284-001	-4.837-001	4.729-002	1.104-001	2.331-001	7.530-002	-7.883-002
1.90	1.075-001	-4.315-001	5.782-002	1.147-001	2.157-001	6.025-002	-8.188-002
2.00	9.938-002	-3.865-001	6.804-002	1.166-001	1.981-001	4.654-002	-8.038-002
2.10	7.350-002	-3.463-001	7.731-002	1.166-001	1.811-001	3.529-002	-7.562-002
2.20	5.976-002	-3.094-001	8.515-002	1.150-001	1.653-001	2.698-002	-6.893-002
2.30	4.803-002	-2.751-001	9.131-002	1.124-001	1.511-001	2.152-002	-6.147-002
2.40	3.814-002	-2.428-001	9.570-002	1.094-001	1.387-001	1.853-002	-5.409-002
2.50	2.986-002	-2.122-001	9.836-002	1.064-001	1.281-001	1.753-002	-4.726-002
2.60	2.293-002	-1.830-001	9.952-002	1.042-001	1.192-001	1.796-002	-4.130-002
2.70	1.711-002	-1.549-001	9.926-002	1.026-001	1.120-001	1.963-002	-3.614-002
2.80	1.223-002	-1.277-001	9.800-002	1.025-001	1.062-001	2.216-002	-3.185-002
2.90	8.175-003	-1.010-001	9.609-002	1.039-001	1.018-001	2.552-002	-2.838-002
3.00	4.937-002	-7.451-002	9.400-002	1.071-001	9.863-002	2.970-002	-2.578-002
3.10	2.583-003	-6.800-002	9.232-002	1.122-001	9.647-002	3.475-002	-2.427-002
3.20	1.231-002	-2.132-002	9.165-002	1.192-001	9.521-002	4.059-002	-2.621-002
3.30	9.918-004	5.603-003	9.265-002	1.277-001	9.472-002	4.698-002	-2.603-002
3.40	1.914-003	3.275-003	9.583-002	1.374-001	9.495-002	5.336-002	-3.016-002
3.50	3.945-003	6.011-002	1.017-001	1.475-001	9.598-002	5.895-002	-3.685-002
3.60	6.923-003	8.774-002	1.104-001	1.572-001	9.748-002	6.275-002	-4.600-002
3.70	1.061-002	1.159-001	1.220-001	1.659-001	9.971-002	6.371-002	-5.707-002
3.80	1.476-002	1.447-001	1.362-001	1.721-001	1.024-001	6.102-002	-6.901-002
3.90	1.918-002	1.751-001	1.524-001	1.752-001	1.053-001	5.430-002	-8.037-002
4.00	2.379-002	2.077-001	1.696-001	1.750-001	1.080-001	4.376-002	-8.967-002
4.50	5.952-002	4.544-001	2.267-001	1.244-001	1.042-001	-1.651-002	-7.952-002
5.00	3.357-001	1.444+000	2.158-001	6.729-002	8.040-002	-2.116-002	-3.727-002
							-5.484-002
							1.075-002
							3.043-001
							-6.964-002
							2.350-002
							8.708-003
							2.257-002
							1.342-002
							8.479-002
							3.438-002
							3.043-001
							-6.964-002
							2.350-002
							8.708-003
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							-6.964-002
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							-6.964-002
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							3.043-001
							-6.964-002
							2.350-002
							8.708-003
							2.257-002
							1.342-002
							8.479-002
							3.438-002
							3.043-001
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							2.350-002
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							2.350-002
							8.708-003
							2.257-002
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k_d	p_1^0	p_2^0	p_3^0	$p_1^{w_0}$	$p_2^{w_0}$	$p_3^{w_0}$
0.61	3.765+009	-7.500+003	6.275+009	3.719+009	-7.500+003	2.499+009
0.61	2.345+006	-3.754+002	3.901+006	2.333+006	-3.744+002	1.556+006
0.61	3.713+005	-7.536+002	6.135+005	3.723+005	-7.451+002	2.465+005
0.70	1.867+004	-1.137+001	3.019+004	1.876+001	-1.109+001	1.227+004
0.70	5.694+004	-1.531+001	9.171+004	5.849+004	-1.462+001	3.788+004
0.70	2.694+003	-2.764+001	4.148+003	2.891+003	-2.122+001	1.803+003
0.70	7.738+003	-3.326+001	1.118+002	8.956+003	-2.698+001	5.284+003
0.70	1.654+002	-4.515+001	2.204+002	1.282+002	-3.159+001	1.192+002
0.70	2.784+002	-6.137+001	3.397+002	4.687+002	-3.455+001	2.306+002
0.70	3.214+002	-8.620+001	3.925+002	9.637+002	-3.500+001	4.637+002
0.70	1.904+002	-3.483+001	1.980+002	2.055+001	-3.141+001	7.262+002
0.70	-4.299+001	-2.195+000	-5.808+002	5.174+001	-2.402+001	1.383+001
0.70	3.126+000	-2.914+000	7.387+002	1.369+000	-7.680+001	4.430+001
0.70	-3.637+000	1.017+000	3.376+001	5.078+002	-1.877+000	4.780+002
0.70	-1.633+000	1.296+000	9.660+001	-1.184+002	-1.600+000	6.288+003
0.70	-1.016+000	1.054+000	9.617+001	-1.353+001	-1.429+000	2.066+002
0.70	7.311+001	8.932+001	1.942+001	1.904+001	-1.340+000	1.284+001
0.70	-5.653+001	7.388+001	2.272+001	-1.132+001	-1.278+000	7.423+002
0.70	4.535+001	6.417+001	1.077+000	-2.567+003	-1.219+000	1.116+001
0.70	3.705+001	5.644+001	1.119+000	1.202+001	-1.153+000	1.565+001
0.70	-3.056+001	4.094+001	2.694+001	-3.260+001	-1.075+000	2.072+001
0.70	2.539+001	4.629+001	2.693+001	3.391+001	-9.858+001	8.226+001
0.70	-2.122+001	3.292+001	1.171+000	5.202+001	-8.877+001	3.503+001
0.70	-1.785+001	3.487+001	1.152+000	-3.236+001	-7.879+001	1.054+000
0.70	-1.510+001	3.099+001	1.112+000	-2.966+001	-6.875+001	3.787+001
0.70	-1.280+001	2.761+001	1.050+000	-2.602+001	-5.906+001	3.915+001
0.70	-0.081+001	2.467+001	9.660+001	-1.042+000	-4.993+001	3.878+001
0.70	-0.022+002	2.211+001	8.517+001	1.157+000	-1.729+001	3.679+001
0.70	-7.372+002	1.982+001	7.388+001	1.263+000	-1.284+001	3.335+001
0.70	-5.821+002	1.774+001	5.988+001	1.356+000	-8.716+002	2.468+001
0.70	-6.371+002	1.578+001	4.447+001	1.434+000	-5.220+002	2.298+001
0.70	-3.058+002	1.388+001	2.792+001	1.494+000	-2.400+001	1.667+001
0.70	-1.945+002	1.200+001	2.750+001	1.534+000	-7.538+003	8.209+002
0.70	-1.109+002	1.015+001	-7.403+002	1.552+000	-1.717+002	2.447+002
0.70	-6.275+003	-3.083+002	-2.458+001	1.546+000	-2.336+003	3.531+002
0.70	-5.536+003	6.733+002	-4.374+001	1.513+000	-1.200+002	9.919+002
0.70	-0.057+003	5.393+002	-6.788+001	1.452+000	-2.602+002	1.679+001
0.70	-1.661+002	4.641+002	-7.908+001	1.364+000	-4.082+002	2.404+001
0.70	-2.760+002	3.933+002	-9.588+001	1.247+000	-5.338+002	3.136+001
0.70	-6.110+002	4.049+002	-1.119+000	1.104+000	-6.224+002	3.829+001
0.70	-5.592+002	4.822+002	-5.926+002	4.678+001	-6.83	

Table A26a
Impedance Coefficients
 $T = 0.05 \quad H = 3.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7
0.01	6.926-005	1.769-002	4.180-008	1.362-005	7.763-005	6.335-003	5.040-006
0.05	1.737-003	9.870-002	2.041-006	6.801-005	1.936-003	3.157-002	1.257-004
0.10	7.015-003	1.790-001	9.113-006	1.755-004	7.684-003	6.250-002	4.994-004
0.15	1.606-002	2.725-001	1.807-005	2.021-004	1.707-002	4.217-002	1.111-003
0.20	2.928-002	3.713-001	3.172-005	2.673-004	2.982-002	1.200-001	1.945-003
0.30	7.172-002	5.058-001	6.918-005	3.929-004	6.388-002	1.681-001	4.201-003
0.40	1.486-001	8.867-001	1.198-004	5.125-004	1.063-001	2.035-001	1.117-003
0.50	3.045-001	1.318-000	1.884-004	6.292-004	1.530-001	2.227-001	1.065-002
0.60	7.216-001	2.080-000	3.007-004	7.478-004	1.975-001	2.192-001	1.519-002
0.70	2.636-000	1.601-000	5.888-004	8.168-004	2.085-001	1.711-001	2.092-002
0.80	7.362-000	-2.759-000	5.322-004	2.231-005	6.727-002	2.963-001	-2.855-003
0.90	1.398-000	-3.268-000	4.488-006	4.996-004	2.602-001	3.606-001	1.759-004
1.00	4.692-001	-2.029-000	2.593-005	7.618-004	3.311-001	3.255-001	5.476-003
1.10	2.380-001	-1.439-000	6.031-005	9.261-004	3.717-001	2.970-001	7.584-003
1.20	1.509-001	-1.105-000	9.519-005	1.065-003	4.004-001	2.715-001	8.291-003
1.30	1.082-001	-9.900-001	1.365-004	1.195-003	4.213-001	2.477-001	8.252-003
1.40	8.251-002	-7.378-001	1.889-004	1.318-003	4.360-001	2.254-001	7.793-003
1.50	6.413-002	-6.219-001	2.551-004	1.432-003	4.457-001	2.051-001	7.144-003
1.60	4.919-002	-5.282-001	3.350-004	1.531-003	4.513-001	1.871-001	6.472-003
1.70	3.624-002	-4.484-001	4.259-004	1.610-003	4.538-001	1.718-001	5.893-003
1.80	2.483-002	-3.774-001	5.224-004	1.663-003	4.540-001	1.593-001	5.468-003
1.90	1.490-002	-3.119-001	6.162-004	1.685-003	4.529-001	1.495-001	5.200-003
2.00	7.139-002	-2.494-001	6.956-004	1.674-003	4.509-001	1.424-001	5.033-003
2.10	1.990-001	-1.885-001	7.445-004	1.631-003	4.488-001	1.378-001	4.865-003
2.20	7.338-004	-1.286-001	7.424-004	1.567-003	4.470-001	1.357-001	4.589-003
2.30	4.789-003	-6.988-002	6.719-004	1.511-003	4.465-001	1.358-001	4.210-003
2.40	1.454-002	-1.469-002	5.393-004	1.509-003	4.482-001	1.376-001	3.982-003
2.50	2.765-002	3.468-002	3.924-004	1.595-003	4.526-001	1.394-001	4.322-003
2.60	3.984-002	7.886-002	2.890-004	1.749-003	4.590-001	1.398-001	5.344-003
2.70	4.882-002	1.215-001	2.458-004	1.925-003	4.661-001	1.383-001	6.704-003
2.80	5.487-002	1.462-001	2.440-004	2.090-003	4.729-001	1.352-001	7.968-003
2.90	5.930-002	2.153-001	2.620-004	2.239-003	4.792-001	1.311-001	8.891-003
3.00	6.312-002	2.706-001	2.889-004	2.380-003	4.867-001	1.262-001	9.400-003
3.10	6.705-002	3.342-001	3.227-004	2.517-003	4.895-001	1.207-001	9.516-003
3.20	7.167-002	4.093-001	3.653-004	2.654-003	4.935-001	1.148-001	9.302-003
3.30	7.775-002	5.008-001	4.201-004	2.791-003	4.945-001	1.087-001	8.843-003
3.40	8.666-002	6.167-001	4.896-004	2.927-003	4.986-001	1.028-001	8.230-003
3.50	1.010-001	7.709-001	5.753-004	3.059-003	4.997-001	9.635-002	7.552-003
3.60	1.264-001	9.900-001	6.784-004	3.184-003	4.999-001	9.070-002	6.895-003
3.70	1.777-001	1.332-000	8.008-004	3.301-003	4.993-001	8.563-002	6.324-003
3.80	3.048-001	1.955-000	9.508-004	3.412-003	4.980-001	8.134-002	5.882-003
3.90	7.961-001	3.475-000	1.172-003	3.530-003	4.966-001	7.804-002	5.546-003
4.00	9.164-000	9.834-000	2.005-003	3.636-003	4.966-001	7.713-002	5.411-003
4.50	6.120-003	-7.947-001	1.893-003	3.259-003	4.872-001	7.223-002	6.144-003
5.00	9.849-002	-4.064-001	4.552-004	3.683-003	5.025-001	7.019-002	8.105-003

κ	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
0.01	1.246+009	-1.463+002	4.258+011	-5.000+004	1.309+009	-1.537+002
0.05	7.607+007	-7.336+002	2.598+008	-2.500+003	7.974+007	-7.676+002
0.10	1.127+005	-2.002+003	3.812+007	-5.002+003	1.171+005	-1.529+001
0.15	4.912+005	-2.255+001	1.640+006	-7.508+001	5.036+005	-2.277+001
0.20	1.183+004	-3.076+001	3.879+006	-1.003+002	1.193+004	-3.007+001
0.30	-1.749+005	-4.956+001	-3.930+007	-1.516+002	6.806+006	-4.390+001
0.40	-3.738+003	-7.428+001	-1.043+004	-2.067+002	-2.880+003	-5.643+001
0.50	-2.737+002	-1.121+000	-6.943+004	-2.717+002	-1.821+002	-6.739+001
0.60	-1.704+001	-1.828+000	-3.445+003	-3.635+002	-7.930+002	-7.554+001
0.70	-1.306+000	-3.518+000	-1.956+002	-5.156+002	-3.142+001	-6.822+001
1.00	-6.445+000	3.446+001	-5.740+002	4.673+003	2.599+001	2.397+001
1.50	-2.045+001	2.259+000	-2.628+003	5.343+003	7.824+001	-4.980+001
2.00	-9.806+001	1.508+000	7.253+003	-7.764+003	7.887+001	-7.066+001
2.50	-6.338+001	1.095+000	1.114+002	-1.468+002	8.387+001	-7.724+001
3.00	-4.659+001	8.485+001	1.375+002	-1.907+002	9.160+001	-7.878+001
3.50	-3.627+001	6.833+001	1.585+002	-2.217+002	1.007+000	-7.739+001
4.00	-2.895+001	5.635+001	1.758+002	-2.446+002	1.104+000	-7.371+001
4.50	-2.321+001	4.709+001	1.893+002	-2.616+002	1.201+000	-6.802+001
5.00	-1.835+001	3.953+001	1.983+002	-2.737+002	1.294+000	-6.048+001
5.50	-1.404+001	3.307+001	2.019+002	-2.813+002	1.381+000	-5.115+001
6.00	-1.010+001	2.727+001	1.986+002	-2.846+002	1.457+000	-4.007+001
6.50	-0.643+002	2.176+001	1.863+002	-2.828+002	1.521+000	-2.726+001
7.00	-0.319+003	1.620+001	1.627+002	-2.740+002	1.570+000	-1.263+001
7.50	-0.529+002	1.022+001	1.253+002	-2.538+002	1.603+000	3.835+002
8.00	5.442+003	3.697+002	7.420+003	-2.138+002	1.626+000	2.228+001
8.50	-6.259+003	-2.913+002	1.766+003	-1.432+002	1.637+000	4.255+001
9.00	-4.780+002	-8.043+002	-2.941+003	-3.791+003	6.380+001	-8.756+003
9.50	-1.088+001	-9.694+002	-2.995+003	8.532+003	1.653+000	1.653+000
1.000	-1.646+001	-7.440+002	1.351+004	1.959+002	1.666+000	1.033+000
1.100	-1.986+001	-2.804+002	4.791+003	2.765+002	1.639+000	1.203+000
1.200	-2.117+001	2.532+002	8.932+003	3.304+002	1.583+000	1.363+000
1.300	-2.100+001	7.515+001	1.659+002	3.491+002	1.498+000	1.515+000
1.400	-2.020+001	1.272+001	1.297+002	3.979+002	1.387+000	1.660+000
1.500	-1.918+001	1.763+001	1.299+002	4.248+002	1.197+000	1.927+000
1.600	-1.810+001	2.274+001	1.196+002	4.513+002	1.053+000	1.253+000
1.700	-1.740+001	2.842+001	1.012+002	4.788+002	9.257+001	2.038+000
1.800	-1.691+001	3.515+001	7.664+003	5.080+002	7.369+001	2.137+000
1.900	-1.681+001	4.369+002	4.769+003	5.398+002	5.340+001	2.218+000
2.000	-1.717+001	5.542+001	1.633+003	5.753+002	3.189+001	2.280+000
2.100	-1.808+001	7.329+001	-1.496+003	6.166+002	9.387+002	2.320+000
2.200	-1.919+001	1.054+000	-4.164+003	6.698+002	-1.391+001	2.337+000
2.30						

λ_{μ}	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	6.551-005	1.798-002	3.224-007	4.811-005	8.004-005	6.469-003
0.05	1.643-003	9.015-002	8.042-006	2.602-004	1.936-003	3.224-002
0.10	6.640-003	1.820-001	4.784-004	7.914-003	7.914-003	6.399-002
0.15	1.521-002	2.775-001	7.110-005	7.128-005	1.966-002	9.444-002
0.20	2.778-002	3.789-001	1.246-004	9.420-004	3.061-002	1.223-001
0.30	6.847-002	6.118-001	2.710-004	1.382-003	6.526-002	1.709-001
0.40	1.438-001	9.205-000	4.886-004	1.801-003	1.079-001	2.064-001
0.50	3.034-001	1.495-000	7.404-004	2.216-003	1.581-001	2.255-001
0.60	7.571-001	2.788-000	2.618-003	2.618-003	1.964-001	2.214-001
0.70	3.436-000	4.164-000	2.633-003	2.818-003	1.906-001	1.712-001
0.80	5.806-000	-4.540-000	1.115-003	-3.376-004	1.278-001	3.667-001
0.90	1.019-000	-3.010-000	2.136-005	1.720-003	3.520-001	4.415-002
1.00	3.774-001	1.437-000	2.561-003	2.561-003	3.821-001	1.833-001
1.10	2.052-001	-1.370-000	1.462-004	3.111-003	3.821-001	2.920-001
1.20	1.763-001	-1.066-000	4.235-004	3.601-003	4.088-001	2.681-001
1.30	1.009-000	-8.673-001	5.979-004	4.053-003	4.287-001	2.437-001
1.40	7.836-002	-7.253-001	8.270-004	4.477-003	4.428-001	2.237-001
1.50	6.141-002	-6.161-001	1.103-003	4.856-003	4.521-001	2.038-001
1.60	4.717-002	-5.272-001	1.435-003	5.169-003	4.574-001	1.862-001
1.70	3.640-002	-4.571-000	1.804-003	5.394-003	4.596-001	1.711-001
1.80	2.344-002	-3.829-001	2.184-003	5.511-003	4.596-001	1.588-001
1.90	1.387-002	-3.199-001	2.540-003	5.507-003	4.582-001	1.493-001
2.00	6.303-003	-2.599-001	2.823-003	5.375-003	4.581-001	1.425-001
2.10	1.500-000	-2.015-001	2.970-003	5.124-003	4.539-001	1.383-001
2.20	7.284-004	-1.440-001	2.902-003	4.817-003	4.522-001	1.365-001
2.30	5.480-002	-8.823-002	2.558-003	4.570-003	4.519-001	1.369-001
2.40	1.600-002	-3.667-002	1.989-003	4.577-003	4.540-001	1.384-001
2.50	2.935-002	8.214-003	1.413-003	4.943-003	4.584-001	1.397-001
2.60	4.111-002	4.748-002	1.647-003	5.557-003	4.643-001	1.395-001
2.70	4.924-002	8.492-002	9.225-004	6.220-003	4.705-001	1.378-001
2.80	5.441-002	1.238-001	9.510-004	6.829-003	4.765-001	1.351-001
2.90	5.782-002	1.661-001	1.053-003	7.890-003	4.820-001	1.315-001
3.00	6.043-002	2.129-001	1.195-003	7.870-003	4.872-001	1.276-001
3.10	6.276-002	2.658-001	1.371-003	8.395-003	4.918-001	1.226-001
3.20	6.523-002	3.248-001	1.540-003	8.860-003	4.957-001	1.174-001
3.30	6.829-002	3.991-001	1.861-003	9.340-003	4.989-001	1.118-001
3.40	7.270-002	4.873-001	2.187-003	9.788-003	5.011-001	1.060-001
3.50	7.975-002	5.990-001	2.566-003	1.019-002	5.023-001	1.002-001
3.60	9.149-002	7.473-001	3.062-003	1.055-002	5.026-001	9.481-002
3.70	1.162-001	9.570-001	3.640-003	1.080-002	5.021-001	8.992-002
3.80	1.595-001	1.282-000	3.973-003	1.112-002	5.009-001	8.570-002
3.90	2.704-001	1.865-0				

Table A27b
Pressure Coefficients
 $T = 0.1 \quad H = 3.0$

$k\alpha$	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
0.01	2.142-009	-1.425-002	1.503-010	-1.000-003	2.367-009	-1.575-002
0.05	1.320-006	-7.148-002	9.238-008	-5.000-002	1.455-006	-7.862-002
0.10	2.019-005	-1.443-001	1.401-006	-1.000-002	2.704-005	-1.565-001
0.15	9.409-005	-2.201-001	6.437-006	-1.501-002	1.012-004	-2.329-001
0.20	7.594-004	-3.007-001	1.740-005	-2.003-002	2.733-004	-3.072-001
0.30	6.817-004	-4.469-001	4.733-005	-3.028-002	6.935-004	-4.472-001
0.40	-1.663-003	-7.373-001	-9.102-005	-4.130-002	-1.133-003	-5.728-001
0.50	-2.474-002	-1.133-000	-1.200-003	-5.453-002	-1.553-002	-6.801-001
0.60	-1.831-001	-1.923-000	-7.180-003	-7.402-002	-8.104-002	-7.547-001
0.70	-1.795-000	-3.974-000	-4.978-002	-1.077-001	-3.543-001	-6.070-001
0.80	-5.619-000	2.171-000	-7.886-002	3.445-002	6.167-001	4.469-002
0.90	-1.579-000	2.102-000	3.385-003	3.573-002	7.727-001	-6.113-001
1.00	-8.177-001	1.395-000	1.727-002	-2.126-002	7.829-001	-7.520-001
1.10	-5.497-001	1.027-000	2.381-002	-3.348-002	8.446-001	-7.924-001
1.20	-6.120-001	8.062-001	2.861-002	-4.153-002	9.314-001	-7.924-001
1.30	-3.244-001	6.564-001	3.254-002	-4.737-002	1.030-000	-7.660-001
1.40	-2.600-001	5.460-001	3.573-002	-5.176-002	1.133-000	-7.182-001
1.50	-2.082-001	4.589-001	3.810-002	-5.500-002	1.235-000	-6.510-001
1.60	-1.638-001	3.865-001	3.952-002	-5.724-002	1.332-000	-5.553-001
1.70	-1.242-001	3.235-001	3.978-002	-5.853-002	1.419-000	-4.617-001
1.80	-8.765-002	2.658-001	3.860-002	-5.887-002	1.495-000	-3.406-001
1.90	-6.320-002	2.100-001	3.558-002	-5.807-002	1.556-000	-2.019-001
2.00	-2.424-002	1.526-001	3.022-002	-5.471-002	1.601-000	-4.522-002
2.10	-1.866-003	8.998-002	2.206-002	-5.077-002	1.629-000	1.302-001
2.20	5.376-003	2.110-002	1.129-002	-4.144-002	1.644-000	3.247-001
2.30	-1.343-002	-4.782-002	-3.816-005	-2.549-002	1.652-000	5.352-001
2.40	-6.320-002	-9.832-002	-7.357-003	-2.650-002	1.658-000	7.511-001
2.50	-1.297-001	-1.100-001	-6.545-003	-2.271-002	1.660-000	9.562-001
2.60	-1.859-001	-8.262-002	1.276-003	4.420-002	1.644-000	1.141-000
2.70	-2.174-001	-3.445-002	1.115-002	5.924-002	1.577-000	1.310-000
2.80	-2.273-001	1.784-002	1.927-002	6.918-002	1.519-000	1.469-000
2.90	-2.240-001	6.733-002	2.436-002	7.623-002	1.411-000	1.620-000
3.00	-2.144-001	1.134-001	2.649-002	8.197-002	1.278-000	1.763-000
3.10	-2.028-001	1.578-001	2.613-002	8.725-002	1.123-000	1.897-000
3.20	-1.914-001	2.030-001	2.379-002	9.247-002	9.483-001	2.017-000
3.30	-1.816-001	2.517-001	1.989-002	9.784-002	7.567-001	2.121-000
3.40	-1.743-001	3.073-001	1.480-002	1.035-001	5.503-001	2.208-000
3.50	-1.705-001	3.744-001	8.880-003	1.094-001	3.313-001	2.274-000
3.60	-1.709-001	4.602-001	1.517-001	1.157-001	2.318-000	2.318-000
3.70	-1.769-001	5.781-001	-4.090-003	1.226-001	-1.343-001	2.339-000
3.80	-1.903-001	7.570-001	-1.026-002	1.305-001	-3.750-001	2.335-000
3.90	-2.110-001	1.074-000	-1.511-002	1.404-001	-6.167-001	2.304-000
4.00	-2.029-001	1.832-000	-1.526-002	1.565-001	-8.457-001	2.241-000
4.50	7.573-002	-1.998-001	-3.075-002	1.519-001	-1.938-000	1.564-000
5.00	7.541-001	-3.743-001	-6.756-002	-2.536-002	-4.080-001	4.080-001

Table A28a
Impedance Coefficients
 $T = 0.2 \quad H = 3.0$

ka	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8
0.01	5.670-005	1.686-002	1.250-006	1.662-004	8.509-005	6.703-003	2.062-005	9.772-004
0.05	1.422-003	8.657-002	3.115-005	8.295-004	2.120-003	3.339-002	5.140-004	4.855-003
0.10	5.778-003	1.700-001	1.235-004	1.651-003	8.397-003	6.601-002	2.037-003	9.515-003
0.15	1.312-002	2.604-001	2.455-003	2.741-004	1.858-002	1.761-001	4.514-003	1.380-002
0.20	2.390-002	1.556-001	4.785-004	3.238-003	3.230-002	1.761-001	7.860-003	1.754-002
0.30	5.853-002	5.747-001	1.029-003	4.727-003	6.827-002	1.756-001	1.675-002	2.288-002
0.40	1.220-001	8.659-001	1.755-003	6.131-003	1.118-001	2.114-001	2.789-002	2.321-001
0.50	2.562-001	1.316-000	2.724-003	7.527-003	1.578-001	2.311-001	4.099-002	3.952-001
0.60	6.514-001	2.178-000	4.371-003	9.069-003	1.994-001	2.294-001	5.728-002	6.906-001
0.70	2.991+000	4.211+000	9.453-003	1.003-002	1.978-001	1.868-001	7.890-002	1.372+000
0.80	6.068+000	-4.741+000	4.316-003	-2.879-002	1.495-001	3.833-001	-2.929-002	-3.566-002
0.90	3.654-001	-2.986+000	5.336-003	3.082-003	3.597-001	1.124-002	9.712-003	-7.754-001
1.00	9.581-001	-1.861+000	6.774-004	8.791-003	3.587-001	3.164-001	2.686-002	5.675-003
1.10	1.975-001	-1.742+000	1.270-003	1.038-002	3.927-001	2.910-001	3.202-002	-9.613-004
1.20	1.330-001	-1.048+000	1.923-003	1.209-002	4.187-001	2.679-001	3.261-002	-6.965-003
1.30	9.902-002	-8.573-001	2.740-003	1.366-002	4.384-001	2.455-001	3.069-002	-1.157-002
1.40	7.682-002	-7.212-001	3.776-003	1.507-002	4.527-001	2.240-001	2.768-002	-1.450-002
1.50	5.973-002	-6.170-001	5.029-003	1.624-002	4.821-001	2.040-001	2.386-002	-1.576-002
1.60	4.524-002	-5.322-001	6.450-003	1.798-002	4.673-001	1.861-001	2.053-002	-1.564-002
1.70	3.254-002	-4.596-001	7.943-003	1.753-002	4.694-001	1.707-001	1.790-002	-1.456-002
1.80	2.148-002	-3.950-001	9.387-003	1.754-002	4.691-001	1.583-001	1.610-002	-1.304-002
1.90	1.219-002	-3.354-001	1.064-002	1.708-002	4.674-001	1.487-001	1.501-002	-1.149-002
2.00	5.051-003	-2.790-001	1.151-002	1.619-002	4.651-001	1.420-001	1.429-002	-1.014-002
2.10	8.276-004	-2.244-001	1.176-002	1.493-002	4.629-001	1.380-001	1.353-002	-8.900-003
2.20	9.241-004	-1.709-001	1.110-002	1.360-002	4.614-001	1.363-001	1.252-002	-7.222-003
2.30	7.004-003	-1.199-001	9.354-003	1.271-002	4.616-001	1.365-001	1.180-002	-4.334-003
2.40	1.893-002	-7.445-002	6.910-003	1.312-002	4.642-001	1.373-001	1.284-002	-2.982-004
2.50	3.283-002	-3.712-002	4.788-003	1.484-002	4.685-001	1.374-001	1.664-002	3.203-003
2.60	4.399-002	-6.022-003	3.702-003	1.740-002	4.734-001	1.362-001	2.216-002	4.165-003
2.70	5.094-002	2.294-002	3.567-003	1.996-002	4.782-001	1.341-001	2.745-002	2.294-003
2.80	5.470-002	5.263-002	3.981-003	2.224-002	4.828-001	1.317-001	3.128-002	-1.523-003
2.90	5.654-002	8.435-002	4.675-003	2.626-002	4.876-001	1.290-001	3.326-002	-6.263-003
3.00	5.724-002	1.188-001	5.557-003	2.611-002	4.923-001	1.257-001	3.464-002	-1.113-002
3.10	5.722-002	1.568-001	6.624-003	2.783-002	4.969-001	1.217-001	3.215-002	-2.208-002
3.20	5.674-002	1.994-001	7.886-003	2.941-002	5.011-001	1.170-001	2.969-002	-1.905-002
3.30	5.610-002	2.490-001	9.335-003	3.080-002	5.046-001	1.117-001	2.653-002	-2.145-002
3.40	5.572-002	3.047-001	3.196-002	3.196-002	5.072-001	1.060-001	2.312-002	-2.267-002
3.50	5.613-002	3.722-001	1.261-002	3.287-002	5.087-001	1.002-001	1.991-002	-2.280-002
3.60	5.806-002	4.546-001	1.432-002	3.351-002	5.092-001	9.460-002	1.721-002	-2.208-002
3.70	6.256-002	5.586-001	1.598-002	3.394-002	5.087-001	8.949-002	1.521-002	-2.080-002
3.80	7.140-002	6.955-001	1.759-002	3.419-002	5.075-001	8.510-002	1.400-002	-1.928-002
3.90	8.424-002	8.471-001	1.914-002	3.431-002	5.058-001	8.154-002	1.354-002	-1.784-002
4.00	1.223-001	1.180+000	2.072-002	3.434-002	5.038-001	7.889-002	1.370-002	-1.677-002
4.50	2.395-001	-2.744+000	2.223-002	3.365-002	4.976-001	7.685-002	1.844-002	-1.637-002
5.00	2.129-001	-5.136-001	2.399-002	2.399-002	5.104-001	7.588-002	1.497-002	-6.912-003

Table A28b
Pressure Coefficients
 $T = 0.2 \quad H = 3.0$

$k\alpha$	$p_1^{(0)}$	$p_2^{(0)}$	$p_3^{(0)}$	$p_1^{(1)}$	$p_2^{(1)}$	$p_3^{(1)}$	$p_3^{(0)}$	$p_2^{(0)}$	$p_3^{(0)}$
0.01	4.089-009	-1.350-002	6.057-010	-2.000-003	4.997-009	-1.650-002	3.970-009	-1.350-002	5.998-010
0.05	2.514-006	-6.770-002	3.749-007	-9.997-003	3.092-006	-8.234-002	2.529-006	-6.739-002	3.735-007
0.10	3.973-005	-1.767-001	5.817-006	-1.998-002	4.795-005	-1.638-001	4.035-005	-1.341-001	5.908-006
0.15	1.936-004	-2.083-001	2.793-003	-2.995-002	2.299-004	-2.434-001	2.035-004	-1.995-002	2.936-005
0.20	5.771-004	-2.843-001	8.154-005	-3.991-002	6.705-004	-3.704-001	6.408-004	-3.760-002	7.429-004
0.30	2.369-003	-4.594-001	3.146-004	-6.007-002	2.586-003	-4.640-001	3.246-003	-5.205-002	4.298-004
0.40	4.324-003	-6.945-001	5.275-004	-8.146-002	4.487-003	-5.903-001	1.058-002	-6.160-002	1.268-003
0.50	-5.952-003	-1.067-000	-5.569-003	-1.068-001	-2.268-003	-6.954-001	2.880-002	-5.596-001	2.971-003
0.60	-1.176-001	-1.814-000	-9.402-003	-1.440-001	-5.229-002	-7.668-001	8.005-002	-5.922-001	6.573-003
0.70	-1.456-000	-3.914-000	-8.137-002	-2.145-001	-2.993-001	-6.625-001	3.247-001	-5.539-001	1.837-002
0.80	-5.874-000	2.292-000	-1.567-001	6.492-002	8.925-001	2.704-002	3.772-002	-1.449-000	1.030-002
0.90	-1.855-000	2.111-000	1.204-002	-4.638-002	8.024-001	-6.465-001	-1.799-001	-1.224-000	3.001-004
1.00	-7.859-001	1.382-000	3.803-002	-4.970-002	8.143-001	-7.619-001	-4.896-002	-1.135-000	2.162-003
1.10	-5.279-001	1.017-000	5.068-002	-7.398-002	8.852-001	-7.827-001	-5.367-002	-1.086-000	4.455-003
1.20	-3.942-001	8.005-001	5.988-002	-9.023-002	9.820-001	-7.649-001	-5.845-002	-1.035-000	7.191-003
1.30	-3.078-001	6.536-001	6.713-002	-1.022-001	1.090-000	-7.212-001	-6.275-002	-9.681-001	1.059-002
1.40	-2.437-001	5.443-001	7.259-002	-1.112-001	1.201-000	-6.563-001	-6.526-002	-8.833-001	1.460-002
1.50	-1.923-001	4.570-001	7.611-002	-1.176-001	1.308-000	-5.718-001	-6.424-002	-7.805-001	1.878-002
1.60	-1.486-001	3.833-001	7.749-002	-1.216-001	1.407-000	-4.690-001	-5.853-002	-6.626-001	2.231-002
1.70	-1.102-001	3.182-001	7.641-002	-1.233-001	1.493-000	-3.479-001	-4.807-002	-5.337-001	2.410-002
1.80	-7.556-002	2.579-001	7.238-002	-1.227-001	1.564-000	-2.089-001	-3.409-002	-3.984-001	2.311-002
1.90	-4.415-002	1.988-001	6.461-002	-1.193-001	1.617-000	-5.186-002	-1.903-002	-2.611-001	1.859-002
2.00	-1.718-001	1.370-001	5.208-002	-1.122-001	1.651-000	-1.233-001	-6.281-003	-1.253-001	1.039-002
2.10	9.659-004	6.871-002	3.796-002	-9.911-002	1.667-000	3.168-001	1.205-004	7.354-003	-6.643-004
2.20	8.385-004	-6.931-003	1.119-002	-7.574-002	1.669-000	5.275-001	-3.524-001	1.380-001	-1.232-002
2.30	-3.012-002	-8.061-002	-1.055-002	-3.765-002	1.664-000	7.492-001	-1.751-002	2.714-001	-2.090-002
2.40	-9.432-002	-1.289-001	-2.047-002	1.362-002	1.654-000	9.674-001	-3.422-002	4.121-001	-2.348-002
2.50	-1.696-001	-1.316-001	-1.203-002	6.557-002	1.631-000	1.166-000	-4.092-002	5.553-001	-2.189-002
2.60	-2.261-001	-9.587-002	8.524-003	1.059-001	1.579-000	1.343-000	-3.214-002	6.867-001	-2.118-002
2.70	-2.540-001	-4.672-002	2.987-002	1.323-001	1.491-000	1.505-000	-1.249-002	7.950-001	-2.430-002
2.80	-2.400-001	5.918-003	4.572-002	1.495-001	1.370-000	1.658-000	1.176-002	8.757-001	-3.109-002
2.90	-2.538-001	5.101-002	5.485-002	1.621-001	1.270-000	1.802-000	3.680-002	9.278-001	-4.057-002
3.00	-2.419-001	9.086-002	5.806-002	1.728-001	1.047-000	1.935-000	6.034-002	9.506-001	-5.215-002
3.10	-2.278-001	1.273-001	5.651-002	1.828-001	8.535-001	2.054-000	8.012-002	9.436-001	-6.558-002
3.20	-2.136-001	1.623-001	5.121-002	1.927-001	6.429-001	2.155-000	9.348-000	9.075-001	-8.044-002
3.30	-2.001-001	1.974-001	4.296-002	2.027-001	4.178-001	2.236-002	9.774-002	8.445-001	-9.581-002
3.40	-1.879-001	2.350-001	3.244-002	2.128-001	1.808-001	2.293-000	9.092-002	7.589-001	-1.101-001
3.50	-1.776-001	2.764-001	2.025-002	2.231-001	-6.499-002	2.326-000	7.260-002	6.561-001	-1.214-001
3.60	-1.696-001	3.243-001	6.954-003	2.335-001	-7.166-001	2.332-000	4.425-002	5.427-001	-1.274-001
3.70	-1.643-001	3.623-001	-6.884-003	2.449-001	-5.709-001	2.311-000	9.261-003	4.249-001	-1.266-001
3.80	-1.628-001	4.563-001	-2.065-002	2.545-001	-8.243-001	2.260-000	-2.739-002	3.084-001	-1.178-001
3.90	-1.665-001	5.578-001	-3.364-002	2.654-001	-1.073-000	2.181-000	-5.929-002	1.985-001	-1.003-001
4.00	-1.775-001	7.110-001	-4.482-002	2.771-001	-1.314-000	2.071-000	-7.985-002	-8.909-001	-1.012-001
4.50	3.733-001	-1.097-000	-1.094-001	-2.315-000	1.120-000	-3.644-001	-7.318-001	-1.441-001	-7.409-002
5.00	9.374-001	2.020-001	3.637-002	-4.963-002	-2.894-000	-3.133-001	2.519-001	-1.829-000	1.722-001

Table A29a
Impedance Coefficients
 $T = 0.3 \quad H = 3.0$

k_u	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9
0.01	4.992-005	1.605-002	2.721-006	3.379-004	9.028-005	6.947-003	3.136-005	1.429-003	1.328-004
0.05	1.274-001	9.044-002	6.794-005	1.644-003	2.249-002	3.459-002	7.812-004	7.092-003	3.318-003
0.10	4.935-003	1.625-001	2.686-004	3.352-003	8.892-003	6.833-002	3.091-003	1.387-002	3.203-003
0.15	1.127-002	2.440-001	5.944-004	4.909-003	1.963-002	1.904-001	6.832-003	2.005-002	2.974-002
0.20	2.049-002	1.388-001	1.034-003	6.557-003	1.401-002	1.307-001	1.186-002	2.537-002	5.278-002
0.30	4.095-002	5.487-001	2.202-003	9.537-003	7.131-002	1.806-001	2.503-002	3.265-002	1.191-001
0.40	1.038-001	8.297-001	3.709-003	1.233-002	1.156-001	2.167-001	4.121-002	3.455-002	1.540-001
0.50	2.183-001	1.269-000	5.679-003	1.511-002	1.616-001	2.370-001	5.974-002	3.005-002	3.677-001
0.60	5.623-001	2.129-000	8.991-003	1.836-002	2.021-001	2.376-001	8.220-002	1.554-002	6.402-001
0.70	2.774-000	4.373-000	1.975-002	2.112-002	2.004-001	2.024-001	1.126-001	-3.890-002	1.296-000
0.80	5.883-000	-5.194-000	7.911-003	-7.636-003	1.892-001	4.032-001	-4.578-002	-3.877-002	-1.441-000
0.90	7.473-002	-7.165-001	3.818-004	1.066-002	3.284-001	3.465-001	2.233-002	1.372-002	-7.274-001
1.00	3.293-001	-1.811-000	1.818-003	1.690-002	3.724-001	3.135-001	4.269-002	4.376-003	-3.937-001
1.10	1.866-001	-1.111-000	3.264-003	2.102-002	4.043-001	2.897-001	4.830-002	-6.812-003	-2.223-001
1.20	1.291-001	-1.023-000	4.927-003	2.454-002	4.298-001	2.675-001	4.748-002	-1.593-002	-1.297-001
1.30	9.633-002	-9.464-001	7.027-003	2.770-002	4.497-001	2.455-001	4.315-002	-2.267-002	-7.238-002
1.40	7.473-002	-7.165-001	9.636-003	3.037-002	4.642-001	2.739-001	3.716-002	-2.651-002	-3.680-002
1.50	5.764-002	-6.170-001	1.268-002	3.236-002	4.736-001	2.036-001	3.095-002	-2.759-002	-1.584-002
1.60	4.306-002	-5.260-001	1.596-002	3.352-002	4.784-001	1.852-001	2.557-002	-2.651-002	-4.666-003
1.70	3.040-002	-4.466-001	1.921-002	3.376-002	4.805-001	1.646-001	2.159-002	-2.411-002	4.029-004
1.80	1.959-002	-4.450-001	2.215-002	3.305-002	4.799-001	1.569-001	1.907-002	-2.122-002	2.219-002
1.90	1.073-002	-3.484-001	2.448-002	3.143-002	4.779-001	1.474-001	1.767-002	-1.848-002	2.735-003
2.00	4.110-002	-2.951-001	2.583-002	2.905-002	4.753-001	1.407-001	1.679-002	-1.612-002	2.955-003
2.10	4.539-004	-2.437-001	2.575-002	2.816-002	4.729-001	1.368-001	1.587-002	-1.384-002	2.426-003
2.20	1.211-003	-1.938-001	2.365-002	2.324-002	4.716-001	1.352-001	1.486-002	-1.071-002	1.329-003
2.30	8.105-003	-1.467-001	1.932-002	2.177-002	4.721-001	1.352-001	1.488-002	-5.901-003	-3.628-003
2.40	2.083-002	-1.060-001	1.396-002	2.329-002	4.746-001	1.354-001	1.811-002	-1.179-004	-1.194-002
2.50	3.513-002	-7.411-002	9.573-003	2.776-002	4.782-001	1.367-001	2.522-002	3.628-003	-1.973-002
2.60	4.622-002	-4.894-002	7.806-003	3.397-002	4.821-001	1.332-001	3.388-002	2.900-003	-2.264-002
2.70	5.277-002	-2.642-002	8.182-003	3.947-002	4.858-001	1.316-001	4.112-002	-1.912-003	-1.992-002
2.80	5.579-002	-3.422-003	9.813-003	4.448-002	4.897-001	1.301-001	4.568-002	-9.160-003	-1.337-002
2.90	5.452-002	2.000-002	1.217-002	4.980-002	4.942-001	1.284-001	4.669-002	-1.719-002	-5.173-003
3.00	5.570-002	4.564-001	1.504-002	5.254-002	4.991-001	1.260-001	4.507-002	-2.478-002	2.959-002
3.10	5.778-002	7.363-002	1.836-002	5.571-002	5.042-001	1.228-001	4.119-002	-3.103-002	9.780-003
3.20	5.113-002	1.046-001	2.203-002	5.824-002	5.090-001	1.145-001	3.588-002	-3.538-002	1.457-002
3.30	4.814-002	1.394-001	2.590-002	6.007-002	5.131-001	1.132-001	2.988-002	-3.762-002	1.692-002
3.40	4.521-002	1.787-001	2.976-002	6.119-002	5.161-001	1.074-001	2.432-002	-3.790-002	1.719-002
3.50	4.274-002	2.235-001	3.361-002	6.169-002	5.178-001	1.013-001	1.952-002	-3.662-002	1.587-002
3.60	4.103-002	2.753-001	3.674-002	6.172-002	5.183-001	9.554-002	1.591-002	-3.434-002	1.367-002
3.70	4.031-002	3.359-001	3.967-002	6.144-002	5.178-001	9.031-002	1.361-002	-3.161-002	1.125-002
3.80	4.083-002	4.027-001	4.225-002	6.108-002	5.165-001	8.588-002	1.252-002	-2.892-002	9.118-003
3.90	4.303-002	4.986-001	4.452-002	6.062-002	5.146-001	8.236-002	1.249-002	-2.658-002	7.584-003
4.00	4.281-002	6.144-001	4.664-002	6.027-002	5.125-001	7.980-002	1.323-002	-2.494-002	6.668-003
4.10	4.411-001	4.312-000	4.856-002	5.254-002	5.061-001	7.973-002	1.303-002	-3.050-002	-3.181-002
4.20	2.716-002	-8.946-001	5.949-002	4.315-002	5.177-001	8.088-002	2.533-003	-2.691-002	-9.364-004
4.30									
4.40									
4.50									
4.60									
4.70									
4.80									
4.90									
5.00									

Table A29b
Pressure Coefficients
 $T = 0.3 \quad H = 3.0$

k_d	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^{u0}	ρ_2^{u0}	ρ_3^{u0}
0.01	5.816-009	-1.275-002	1.368-009	-3.000-003	7.868-009	-1.727-002
0.05	3.618-006	-6.396-002	8.486-007	-1.499-002	4.879-006	-8.606-002
0.10	5.690-005	-1.290-001	1.325-005	-2.945-002	7.611-005	-1.710-001
0.15	2.810-004	-1.964-001	6.433-005	-4.484-002	3.692-004	-2.538-001
0.20	8.549-004	-2.682-001	1.914-004	-5.967-002	1.097-004	-2.469-001
0.30	3.820-003	-6.334-001	8.015-004	-8.947-002	4.582-003	-4.803-001
0.40	9.364-003	-6.558-001	1.783-003	-1.208-001	1.027-002	-6.067-001
0.50	9.343-003	-1.011-000	1.612-003	-1.576-001	1.087-002	-7.086-001
0.60	-6.769-002	-1.739-000	-8.092-003	-2.118-001	-2.537-002	-7.738-001
0.70	-1.263-000	-3.943-000	-1.053-001	-3.234-001	-2.502-001	-6.487-001
0.80	-5.766-000	2.704-000	-2.097-001	1.105-001	8.174-001	-6.936-002
0.90	-1.403-000	2.083-000	2.749-002	-2.107-002	8.270-001	-6.967-001
1.00	-7.304-001	1.353-000	6.235-002	-8.644-002	8.399-001	-7.755-001
1.10	-4.926-001	9.099-001	8.009-002	-1.221-001	9.219-001	-7.729-001
1.20	-3.665-001	7.907-001	9.298-002	-1.466-001	1.029-000	-7.352-001
1.30	-2.833-001	6.481-001	1.026-001	-1.647-001	1.147-000	-6.729-001
1.40	-2.211-001	5.405-001	1.090-001	-1.782-001	1.265-000	-5.899-001
1.50	-1.716-001	4.532-001	1.122-001	-1.942-001	1.377-000	-4.879-001
1.60	-1.298-001	3.785-001	1.120-001	-1.920-001	1.476-000	-3.676-001
1.70	-8.424-002	3.117-001	1.083-001	-1.926-001	1.560-000	-2.292-001
1.80	-6.270-002	2.495-001	1.003-001	-1.890-001	1.624-000	-7.264-002
1.90	-3.466-002	1.883-001	8.704-002	-1.808-001	1.666-000	1.019-001
2.00	-1.125-000	1.240-001	6.693-002	-1.665-001	1.687-000	2.941-001
2.10	2.594-003	5.238-002	3.891-002	-1.422-001	1.687-000	5.033-001
2.20	-3.476-003	-2.677-002	5.179-003	-1.015-001	1.672-000	7.266-001
2.30	-4.255-002	-1.025-001	-2.457-002	-3.841-002	1.648-000	9.550-001
2.40	-1.151-001	-1.491-001	-3.362-002	4.259-002	1.616-000	1.172-000
2.50	-1.955-001	-1.475-001	-1.475-002	1.204-001	1.561-000	1.364-000
2.60	-2.534-001	-1.080-001	2.037-002	1.790-001	1.471-000	1.471-000
2.70	-2.809-001	-5.531-002	5.374-002	2.159-001	1.342-000	1.685-000
2.80	-2.861-001	-4.712-003	7.809-002	2.399-001	1.178-000	1.828-000
2.90	-2.786-001	3.925-002	9.210-002	2.575-001	9.877-001	1.959-000
3.00	-2.648-001	7.694-002	9.725-002	2.723-001	7.751-001	2.075-000
3.10	-2.481-001	1.100-001	9.527-002	2.859-001	5.448-001	2.172-000
3.20	-2.304-001	1.401-001	8.759-002	2.992-001	3.004-001	2.247-000
3.30	-2.125-001	1.684-001	7.532-002	3.123-001	4.530-002	2.296-000
3.40	-1.952-001	1.963-001	5.940-002	3.253-001	2.317-000	2.317-000
3.50	-1.789-001	2.246-001	4.066-002	3.391-001	4.837-001	2.308-000
3.60	-1.637-001	2.546-001	1.991-002	3.508-001	2.769-000	8.395-002
3.70	-1.501-001	2.876-001	-2.061-003	3.632-001	-1.014-000	2.198-000
3.80	-1.385-001	3.255-001	-2.442-002	3.752-001	-1.269-000	2.095-000
3.90	-1.295-001	3.710-001	-4.641-002	3.848-001	-1.514-000	1.960-000
4.00	-1.230-001	4.289-001	-6.697-002	3.970-001	-1.744-000	1.794-000
4.10	-1.125-002	4.374-000	-4.671-001	4.876-001	-2.576-000	5.202-001
4.20	-6.974-002	4.504-002	6.791-003	2.792-001	-1.073-000	-1.073-000
4.30						
4.40						
4.50						
4.60						
4.70						
4.80						
4.90						
5.00						
5.10						
5.20						
5.30						
5.40						
5.50						
5.60						
5.70						
5.80						
5.90						
6.00						
6.10						
6.20						
6.30						
6.40						
6.50						
6.60						
6.70						
6.80						
6.90						
7.00						
7.10						
7.20						
7.30						
7.40						
7.50						
7.60						
7.70						
7.80						
7.90						
8.00						
8.10						
8.20						
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8.90						
9.00						
9.10						
9.20						
9.30						
9.40						
9.50						
9.60						
9.70						
9.80						
9.90						
10.00						

Table A30a
Impedance Coefficients
 $T = 0.5 \quad H = 3.0$

k_a	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7
0.01	1.595-005	1.432-002	7.135-006	8.034-004	1.005-004	7.388-003	5.356-005
0.05	9.003-004	7.183-002	4.007-003	4.007-003	2.501-003	3.677-002	1.333-003
0.10	7.622-003	1.451-001	7.010-004	7.054-003	9.864-003	7.252-002	2.208-002
0.15	8.240-003	2.214-001	1.544-003	1.179-002	2.168-002	1.063-001	1.179-002
0.20	1.491-002	3.026-001	2.667-003	1.548-002	3.735-002	1.373-001	1.995-002
0.30	7.592-002	4.905-001	5.579-003	2.236-002	7.717-002	1.891-001	4.143-002
0.40	7.365-002	7.425-001	9.179-003	2.873-002	1.230-001	2.258-001	6.678-002
0.50	1.530-001	1.137-000	1.365-002	3.515-002	1.690-001	2.471-001	9.432-002
0.60	3.891-001	1.911-000	2.073-002	4.280-002	2.088-001	1.254-001	1.892-002
0.70	1.907-000	4.128-000	4.288-002	5.272-002	2.158-001	2.323-001	1.672-002
0.80	7.089-000	5.553-000	2.520-002	2.914-002	2.273-001	4.253-001	-8.542-002
0.90	8.304-001	-2.946-000	1.643-003	2.401-002	3.547-001	3.422-001	1.673-002
1.00	3.128-001	-1.780-000	6.497-003	4.085-002	3.914-001	3.118-001	7.621-002
1.10	1.808-001	-1.284-000	1.146-002	5.117-002	4.219-001	2.906-001	7.805-002
1.20	1.252-001	-1.011-000	1.741-002	5.964-002	4.481-001	2.698-001	7.157-002
1.30	9.374-002	-8.364-001	2.477-002	6.448-002	4.692-001	2.478-001	5.988-002
1.40	7.135-002	-7.133-001	3.332-002	7.121-002	4.847-001	2.253-001	4.662-002
1.50	5.339-002	-6.190-001	4.237-002	7.342-002	4.945-001	2.035-001	4.664-002
1.60	3.844-002	-5.422-001	5.105-002	7.308-002	4.993-001	1.839-001	2.565-002
1.70	2.603-002	-4.768-001	5.859-002	7.047-002	5.003-001	1.672-001	2.008-002
1.80	1.607-002	-4.191-001	6.441-002	6.601-002	4.988-001	1.540-001	1.737-002
1.90	8.316-003	-3.670-001	6.806-002	6.008-002	4.950-001	1.442-001	1.646-002
2.00	2.827-002	-3.181-001	6.849-002	5.130-002	4.929-001	1.375-001	1.624-002
2.10	1.366-004	-2.727-001	6.629-002	4.601-002	4.902-001	1.336-001	1.616-002
2.20	1.567-003	-2.285-001	5.905-002	4.006-002	4.888-001	1.317-001	1.662-002
2.30	8.903-003	-1.872-001	4.717-002	3.862-002	4.890-001	1.310-001	1.981-002
2.40	2.236-002	-1.522-001	2.360-002	4.447-002	4.906-001	1.303-001	2.860-002
2.50	3.833-002	-1.266-001	2.381-002	5.877-002	4.927-001	1.291-001	4.247-002
2.60	5.151-002	-1.097-001	2.169-002	7.685-002	4.945-001	1.282-001	5.648-002
2.70	5.918-002	-9.762-002	2.666-002	9.276-002	4.968-001	1.282-001	6.534-002
2.80	6.153-002	-8.671-002	3.636-002	1.060-001	5.003-001	1.287-001	6.680-002
2.90	5.981-002	-7.491-002	4.856-002	1.150-001	5.054-001	1.290-001	6.142-002
3.00	5.537-002	-6.109-002	6.203-002	1.210-001	5.118-001	1.279-001	5.109-002
3.10	4.950-002	-4.471-002	7.469-002	1.222-001	5.185-001	1.249-001	3.872-002
3.20	4.328-002	-2.572-002	8.614-002	1.211-001	5.247-001	1.201-001	2.650-002
3.30	3.749-002	-4.388-003	9.567-002	1.181-001	5.295-001	1.140-001	1.618-002
3.40	3.251-002	-1.491-002	1.032-001	1.142-001	5.327-001	1.072-001	8.519-003
3.50	2.840-002	4.390-002	1.088-001	1.102-001	5.342-001	1.004-001	3.556-002
3.60	2.501-002	7.050-002	1.131-001	1.065-001	5.344-001	9.416-002	9.357-004
3.70	2.214-002	9.893-002	1.144-001	1.035-001	5.334-001	8.868-002	1.625-004
3.80	1.957-002	1.296-001	1.191-001	1.013-001	5.317-001	8.416-002	7.362-004
3.90	1.719-002	1.633-001	1.217-001	9.967-002	5.295-001	8.067-002	2.218-003
4.00	1.502-002	2.010-001	1.246-001	9.902-002	5.271-001	7.827-002	4.089-003
4.50	1.714-002	5.131-001	1.497-001	9.103-002	5.203-001	3.320-002	3.320-002
5.00	2.395-001	2.227-000	1.555-001	5.310-002	5.233-001	7.999-002	-1.627-002

Table A30b

ω	p_1^0	p_2^0	p_3^0	p_1^{40}	p_2^{40}	p_3^{40}
0.01	8.475-009	-1.125-002	3.766-009	-5.000-003	1.412-008	-1.875-002
0.05	5.277-006	-5.640-002	2.318-006	-2.698-002	8.766-006	-9.350-002
0.10	8.343-005	-1.137-001	3.661-005	-4.942-002	1.372-004	-1.855-001
0.15	4.162-004	-1.137-001	1.789-004	-7.644-002	6.599-004	-2.745-001
0.20	1.274-003	-2.459-001	5.177-004	-9.880-002	2.012-003	-3.594-001
0.25	5.975-003	-3.800-001	2.354-003	-1.471-001	8.786-003	-5.128-001
0.30	1.678-002	-5.737-001	9.916-003	-1.968-001	2.722-002	-6.396-001
0.35	3.238-002	-8.828-001	5.917-003	-2.537-001	3.779-002	-7.350-001
0.40	1.651-002	-1.515-000	4.887-003	-3.751-001	3.123-002	-7.904-001
0.45	-6.607-001	-3.530-000	-9.862-002	-5.119-001	-1.212-001	-6.981-001
0.50	-6.711-000	2.161-000	-3.934-002	-1.818-001	9.450-001	-6.253-002
0.55	-1.349-000	2.732-002	6.305-002	-7.323-001	-9.607-002	-1.590-000
0.60	-6.805-001	1.355-000	1.175-001	-1.751-001	9.013-001	-7.591-001
0.65	-4.487-001	1.001-000	1.440-001	-2.767-001	1.002-000	-7.141-001
0.70	-3.237-001	7.936-002	1.611-001	-2.787-001	1.128-000	-6.370-001
0.75	-2.402-001	6.505-001	1.706-001	-3.112-001	1.262-000	-5.377-001
0.80	-1.788-001	5.396-001	1.735-001	-3.723-001	1.391-000	-2.042-001
0.85	-1.371-001	4.476-001	1.706-001	-3.431-001	1.507-000	-2.849-001
0.90	-9.592-002	3.681-001	1.632-001	-3.439-001	1.601-000	-1.326-001
0.95	-6.701-002	2.974-001	1.517-001	-3.757-001	1.670-000	3.743-002
1.00	-2.286-002	2.323-001	1.352-001	-3.193-001	1.711-000	2.251-001
1.05	-2.216-002	1.119-001	2.045-001	-2.945-001	1.723-000	4.295-001
1.10	5.880-003	1.029-001	7.939-002	-2.590-001	1.707-000	6.488-001
1.15	2.968-002	3.675-002	2.668-001	-2.668-001	1.667-000	8.798-001
1.20	-1.135-002	-5.195-002	-1.204-002	-1.288-001	1.606-000	1.116-000
1.25	-5.617-002	-1.291-001	-5.169-002	-1.671-002	1.532-000	1.346-000
1.30	-1.355-001	-1.803-001	-5.786-002	1.204-001	1.439-000	1.551-000
1.35	-2.770-001	-1.830-001	-1.838-002	2.537-001	1.315-000	1.721-000
1.40	-2.930-001	-1.424-001	4.984-002	3.529-001	1.147-000	1.860-000
1.45	-3.376-001	-8.195-002	1.168-001	4.130-001	9.354-001	1.979-000
1.50	-7.472-001	-2.060-002	1.696-001	4.471-001	6.892-001	2.027-001
1.55	-3.175-001	3.106-002	2.020-001	4.658-001	4.196-001	2.167-000
1.60	-1.164-001	7.466-002	2.168-001	4.778-001	1.351-001	2.231-000
1.65	-2.894-001	1.113-001	2.159-001	4.868-001	-1.578-001	2.266-000
1.70	-2.692-001	1.378-001	2.018-001	4.958-001	-4.530-001	2.270-000
1.75	-2.310-001	1.582-001	1.779-001	5.065-001	-7.476-001	2.278-000
1.80	-2.031-001	1.746-001	1.469-001	5.190-001	-0.136-000	2.168-000
1.85	-1.768-001	1.478-001	1.131-001	5.313-001	-1.316-000	2.061-000
1.90	-1.524-001	1.984-001	7.233-002	5.482-001	-1.582-000	1.916-000
1.95	-1.298-001	2.100-001	3.216-002	5.640-001	-1.829-000	1.735-000
2.00	-1.089-001	2.200-001	-7.903-003	5.798-001	-2.051-000	1.519-000
2.05	-0.985-002	2.300-001	-6.715-002	5.952-001	-2.251-000	-4.638-002
2.10	-0.781-001	2.401-001	-8.228-002	6.105-001	-2.417-000	9.947-001
2.15	-0.7473-002	3.265-001	-1.550-001	6.372-001	-2.703-000	3.364-000
2.20	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.25	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.30	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.35	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.40	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.45	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.50	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.55	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.60	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.65	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.70	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.75	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.80	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.85	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.90	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
2.95	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000
3.00	-9.162-002	3.101-001	-5.649-002	7.890-001	-2.929-000	-2.305-000

Table A31a
Impedance Coefficients
 $T = 0.05 \quad H = 5.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5
0.01	1.311-004	3.959-002	4.916-008	8.317-006	1.306-004
0.05	2.853-003	1.096-001	1.223-006	4.153-005	3.251-003
0.10	1.176-002	4.102-001	4.828-006	8.274-005	1.284-003
0.15	2.787-002	6.453-001	1.064-005	1.234-004	2.831-002
0.20	5.396-002	9.247-001	1.847-005	1.636-004	4.844-002
0.30	1.699-001	1.780-000	4.037-005	2.449-004	1.021-001
0.40	7.193-001	4.034-000	8.423-005	3.442-004	1.651-001
0.50	2.958-001	-1.429-000	5.904-004	1.084-005	4.352-002
0.60	6.240-001	-4.701-000	9.057-006	3.016-004	2.554-001
0.70	1.580-001	-2.494-000	2.972-005	4.177-004	3.101-001
0.80	7.458-002	-1.715-000	5.017-005	5.092-004	3.478-001
0.90	4.348-002	-4.447-001	8.022-005	5.965-004	3.736-001
1.00	2.510-002	-1.050-000	1.253-004	6.785-004	3.899-001
1.10	1.158-002	-8.620-001	1.875-004	7.489-004	3.993-001
1.20	2.331-003	-7.106-001	2.666-004	7.994-004	4.042-001
1.30	8.729-004	-5.759-001	3.628-004	8.178-004	4.067-001
1.40	2.049-002	-4.447-001	4.734-004	7.717-004	4.071-001
1.50	1.055-001	-3.713-001	5.187-004	5.758-004	4.061-001
1.60	2.088-001	-3.710-001	2.078-004	4.411-004	4.195-001
1.70	1.478-001	-4.093-001	2.467-005	6.921-004	4.409-001
1.80	9.302-002	-3.452-001	4.423-005	8.793-004	4.536-001
1.90	6.551-002	-3.097-001	8.963-005	1.001-003	4.626-001
2.00	4.940-002	-2.571-001	1.416-004	1.097-003	4.692-001
2.10	3.848-002	-2.078-001	2.042-004	1.176-003	4.736-001
2.20	2.864-002	-1.600-001	2.776-004	1.231-003	4.758-001
2.30	1.930-002	-1.118-001	3.537-004	1.255-003	4.762-001
2.40	1.057-002	-6.139-002	4.155-004	1.242-003	4.756-001
2.50	3.617-003	-6.994-003	4.371-004	1.197-003	4.746-001
2.60	1.071-003	5.224-002	3.917-004	1.151-003	4.742-001
2.70	6.002-003	1.140-001	2.871-004	1.163-003	4.752-001
2.80	1.489-002	1.735-001	1.922-004	1.262-003	4.778-001
2.90	2.776-002	2.309-001	1.577-004	1.400-003	4.812-001
3.00	3.565-002	2.914-001	1.691-004	1.530-003	4.848-001
3.10	4.098-002	3.604-001	2.031-004	1.646-003	4.882-001
3.20	4.477-002	4.428-001	2.523-004	1.752-003	4.911-001
3.30	4.784-002	5.453-001	3.144-004	1.846-003	4.930-001
3.40	5.103-002	6.787-001	3.927-004	1.923-003	4.939-001
3.50	5.576-002	8.628-001	4.739-004	1.980-003	4.938-001
3.60	6.484-002	1.139-000	5.005-004	2.016-003	4.929-001
3.70	8.588-002	1.604-000	6.154-004	2.061-003	4.916-001
3.80	1.501-001	2.592-000	6.712-004	2.066-003	4.903-001
3.90	5.842-001	6.286-000	7.531-004	2.109-003	4.887-001
4.00	1.771-000	-1.649-001	5.539-004	2.021-003	4.922-001
4.10	3.888-002	-9.437-001	6.440-004	2.544-003	4.989-001
4.20	5.740-002	-3.637-001	6.348-004	2.397-003	4.981-001

Table A31b
Pressure Coefficients
 $T = 0.05 \quad H = 5.0$

k_{ω}	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^{90}	ρ_2^{90}	ρ_3^{90}
0.01	4.301-004	-2.434-002	8.820-011	-5.000-004	4.520-009	-2.562-002
0.05	2.581-006	-1.229-001	5.259-008	-2.502-003	2.695-006	-1.279-001
0.10	1.365-005	-2.522-001	7.116-007	-5.021-003	3.651-005	-2.544-001
0.15	1.270-004	-3.954-001	2.450-006	-7.579-003	1.265-004	-3.783-001
0.20	1.156-004	-5.653-001	2.161-006	-1.022-002	1.215-004	-4.986-001
0.30	-6.465-003	-1.080-000	-9.748-005	-1.620-002	-4.489-003	-7.255-001
0.40	-1.389-003	-2.446-000	-1.493-003	-2.588-002	-5.925-002	-9.316-001
0.50	-1.735-003	-1.724-000	-8.101-002	-7.164-003	-2.113-001	2.281-001
0.60	-8.117-001	2.606-000	2.896-003	-7.664-003	4.867-001	-1.104-000
0.70	-3.433-001	1.347-000	5.071-003	-1.720-002	5.190-001	-1.273-000
0.80	-2.147-001	8.800-001	6.542-002	-2.261-002	6.268-001	-1.378-000
0.90	-1.458-001	6.190-001	7.873-003	-2.700-002	7.658-001	-1.448-000
1.00	-9.506-002	4.331-001	8.967-003	-3.105-002	9.216-001	-1.489-000
1.10	-5.118-002	2.773-001	9.588-003	-3.513-002	1.085-000	-1.498-000
1.20	-1.157-002	1.209-001	9.219-003	-3.961-002	1.248-000	-1.472-000
1.30	1.583-002	-7.124-002	6.526-003	-6.492-002	1.400-000	-1.405-000
1.40	-2.512-002	-3.552-001	-2.324-003	-5.059-002	1.533-000	-1.269-000
1.50	-3.957-001	-7.187-001	-2.500-002	-4.594-002	1.692-000	-9.937-001
1.60	-1.109-000	-3.700-001	-3.117-002	-5.630-003	2.100-000	-7.109-001
1.70	-9.517-001	2.371-001	-4.453-004	9.068-003	2.421-000	-6.850-001
1.80	-6.610-001	3.786-001	1.600-002	3.851-003	2.573-000	-5.914-001
1.90	-4.719-001	3.839-001	2.313-000	-1.325-003	2.688-000	-4.196-001
2.00	-3.483-001	3.615-001	2.644-002	-4.807-003	2.783-000	-2.025-001
2.10	-2.564-001	3.334-001	2.766-002	-8.071-003	2.858-000	4.284-002
2.20	-1.805-001	3.030-001	2.723-002	-8.463-003	2.906-000	3.101-001
2.30	-1.131-001	2.683-001	2.508-002	-9.077-003	2.925-000	5.943-001
2.40	-5.212-002	2.240-001	2.088-002	-8.609-003	2.912-000	8.936-001
2.50	-3.650-003	1.624-001	1.436-002	-6.005-003	2.867-000	1.207-000
2.60	1.296-002	8.211-002	6.411-003	7.304-004	2.795-000	1.532-000
2.70	-2.516-002	9.379-003	7.089-004	1.262-002	2.706-000	1.858-000
2.80	-1.014-001	-9.692-003	9.882-004	2.589-002	2.595-000	2.164-000
2.90	-1.650-001	2.907-002	5.302-003	3.541-002	2.448-000	2.445-000
3.00	-1.952-001	9.319-002	9.487-003	4.072-002	2.259-000	2.705-000
3.10	-2.010-001	1.610-001	1.178-002	4.368-002	2.030-000	2.947-000
3.20	-1.940-001	2.279-001	1.213-002	4.572-002	1.767-000	3.169-000
3.30	-1.818-001	2.959-001	1.092-002	4.758-002	1.475-000	3.368-000
3.40	-1.679-001	3.710-001	8.526-003	4.961-002	1.157-000	3.539-000
3.50	-1.549-001	5.278-001	5.205-002	5.205-002	8.167-001	3.678-000
3.60	-1.454-001	5.821-001	1.529-003	5.513-002	4.578-001	3.784-000
3.70	-1.444-001	7.681-001	-2.283-003	5.910-002	8.553-002	3.853-000
3.80	-1.594-001	1.137-000	-5.498-003	6.445-002	-2.932-001	3.883-000
3.90	-1.944-001	2.437-000	-6.179-003	7.372-002	-6.575-001	3.868-000
4.00	1.204-000	-6.268-000	-1.520-002	5.490-002	-1.191-000	3.799-000
4.50	2.055-001	-5.872-001	-3.216-002	5.705-002	-3.036-000	2.943-000
5.00	5.171-001	-2.709-001	-2.153-002	5.435-003	-4.373-000	1.165-000
				7.349-002	3.880-003	7.349-002
				-1.063-003	-1.063-003	-1.063-003
				-2.535-001	-2.535-001	-2.535-001
				-1.126-001	-1.126-001	-1.126-001
				-6.087-003	-6.087-003	-6.087-003
				1.715-001	1.715-001	1.715-001
				-1.293-002	-1.293-002	-1.293-002
				2.273-002	2.273-002	2.273-002
				-8.389-001	-8.389-001	-8.389-001
				1.632-002	1.632-002	1.632-002
				1.061-002	1.061-002	1.061-002
				4.321-001	4.321-001	4.321-001
				-1.821-001	-1.821-001	-1.821-001
				4.831-003	4.831-003	4.831-003
				-2.425-003	-2.425-003	-2.425-003
				1.865-001	1.865-001	1.865-001
				-9.680-004	-9.680-004	-9.680-004
				5.731-002	5.731-002	5.731-002
				-4.739-003	-4.739-003	-4.739-003
				1.715-001	1.715-001	1.715-001
				1.456-001	1.456-001	1.456-001
				-2.823-002	-2.823-002	-2.823-002
				1.037-000	1.037-000	1.037-000
				-1.035-003	-1.035-003	-1.035-003
				-2.535-001	-2.535-001	-2.535-001
				-1.126-001	-1.126-001	-1.126-001
				-6.087-003	-6.087-003	-6.087-003
				1.715-001	1.715-001	1.715-001
				-1.293-002	-1.293-002	-1.293-002
				2.273-002	2.273-002	2.273-002
				-8.389-001	-8.389-001	-8.389-001
				1.632-002	1.632-002	1.632-002
				1.061-002	1.061-002	1.061-002
				4.321-001	4.321-001	4.321-001
				-1.821-001	-1.821-001	-1.821-001
				4.831-003	4.831-003	4.831-003
				-2.425-003	-2.425-003	-2.425-003
				1.865-001	1.865-001	1.865-001
				-9.680-004	-9.680-004	-9.680-004
				5.731-002	5.731-002	5.731-002
				-4.739-003	-4.739-003	-4.739-003
				1.715-001	1.715-001	1.715-001
				1.456-001	1.456-001	1.456-001
				-2.823-002	-2.823-002	-2.823-002
				1.037-000	1.037-000	1.037-000
				-1.035-003	-1.035-003	-1.035-003
				-2.535-001	-2.535-001	-2.535-001
				-1.126-001	-1.126-001	-1.126-001
				-6.087-003	-6.087-003	-6.087-003
				1.715-001	1.715-001	1.715-001
				-1.293-002	-1.293-002	-1.293-002
				2.273-002	2.273-002	2.273-002
				-8.389-001	-8.389-001	-8.389-001
				1.632-002	1.632-002	1.632-002
				1.061-002	1.061-002	1.061-002
				4.321-001	4.321-001	4.321-001
				-1.821-001	-1.821-001	-1.821-001
				4.831-003	4.831-003	4.831-003
				-2.425-003	-2.425-003	-2.425-003
				1.865-001	1.865-001	1.865-001
				-9.680-004	-9.680-004	-9.680-004
				5.731-002	5.731-002	5.731-002
				-4.739-003	-4.739-003	-4.739-003
				1.715-001	1.715-001	1.715-001
				1.456-001	1.456-001	1.456-001
				-2.823-002	-2.823-002	-2.823-002
				1.037-000	1.037-000	1.037-000
				-1.035-003	-1.035-003	-1.035-003
				-2.535-001	-2.535-001	-2.535-001
				-1.126-001	-1.126-001	-1.126-001
				-6.087-003	-6.087-003	-6.087-003
				1.715-001	1.715-001	1.715-001
				-1.293-002	-1.293-002	-1.293-002
				2.273-002	2.273-002	2.273-002
				-8.389-001	-8.389-001	-8.389-001
				1.632-002	1.632-002	1.632-002
				1.061-002	1.061-002	1.061-002
				4.321-001	4.321-001	4.321-001
				-1.821-001	-1.821-001	-1.821-001
				4.831-003	4.831-003	4.831-003
				-2.425-003	-2.425-003	-2.425-003
				1.865-001	1.865-001	1.865-001
				-9.680-004	-9.680-004	-9.680-004
				5.731-002	5.731-002	5.731-002
				-4.739-003	-4.739-003	-4.739-003
				1.715-001	1.715-001	1.715-001
				1.456-001	1.456-001	1.456-001
				-2.823-002	-2.823-002	-2.823-002
				1.037-000	1.037-000	1.037-000
				-1.035-003	-1.035-003	-1.035-003
				-2.535-001	-2.535-001	-2.535-001
				-1.126-001	-1.126-001	-1.126-001
				-6.087-003	-6.087-003	-6.087-003
				1.715-001	1.715-001	1.715-001
				-1.293-002	-1.293-002	-1.293-002
				2.273-002	2.273-002	2.273-002
				-8.389-001	-8.389-001	-8.389-001
				1.632-002	1.632-002	1.632-002
				1.061-002	1.061-002	1.061-002
				4.321-001	4.321-001	4.321-001
				-1.821-001	-1.821-001	-1.821-001
				4.831-003	4.831-003	4.831-003
				-2.425-003	-2.425-003	-2.425-003
				1.865-001	1.865-001	1.865-001
				-9.680-004	-9.680-004	-9.680-004
				5.731-002	5.731-002	5.731-002
				-4.739-003	-4.739-003	-4.739-003
				1.715-001	1.715-001	1.715-001
				1.456-001	1.456-001	1.456-001
				-2.823-002	-2.823-002	-2.823-002
				1.037-000	1.037-000	1.037-000
				-1.035-003	-1.035-003	-1.035-003
				-2.535-001	-2.535-001	-2.535-001
				-1.126-001	-1.126-001	-1.126-001
				-6.087-003	-6.087-003	-6.087-003
				1.715-001	1.715-001	1.715-001
				-1.293-002	-1.293-002	-1.293-002
				2.273-002	2.273-002	2.273-002
				-8.389-001	-8.389-001	-8.389-001
				1.632-002	1.632-002	1.632-002
				1.061-002	1.061-002	1.061-002
				4.321-001	4.321-001	4.321-001
				-1.821-001	-1.821-001	

Table A32:
Impedance Coefficients
 $T = 0.1 \quad H = 5.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6	Z_7	Z_8	Z_9	Z_{10}	Z_{11}	Z_{12}	Z_{13}
0.01	1.174-004	3.878-002	1.968-007	2.934-005	1.348-004	8.471-003	1.030-005	3.848-004	2.473-004	8.531-003	9.447-006	8.596-004	
0.05	2.859-003	1.956-001	4.896-006	1.465-004	3.356-003	4.213-002	2.564-004	1.905-003	6.196-003	4.247-002	2.367-004	4.317-003	
0.10	1.177-002	4.019-001	1.931-005	2.915-004	1.335-002	8.282-002	1.012-003	3.649-003	2.498-002	8.379-002	9.535-004	8.759-003	
0.15	2.791-002	6.320-001	4.250-005	4.348-004	2.519-002	1.207-001	2.227-003	5.245-003	5.707-002	1.230-001	2.178-003	1.350-002	
0.20	5.400-002	9.052-001	7.363-005	5.750-004	5.042-002	1.547-001	3.850-003	6.480-003	1.042-001	1.592-001	3.988-003	1.882-002	
0.30	1.697-001	1.740+000	1.601-004	8.584-004	1.050-001	2.065-001	8.156-003	7.728-003	2.650-001	2.210-001	1.042-002	3.377-002	
0.40	1.171-001	3.949+000	1.208-003	1.700-001	2.290-001	2.290-001	1.469-002	6.774-003	6.792-001	2.533-001	3.083-002	7.546-002	
0.50	2.855-001	-7.755-001	2.221-003	-5.107-005	4.743-002	1.781-001	1.063-002	-3.772-002	1.169+000	-4.424+000	5.019-001	-1.399-001	
0.60	6.279-001	-4.639+000	3.756-005	1.003-003	2.569-001	3.003-001	5.714-003	3.008-003	-6.323-001	-1.132-001	-9.414-003	-8.289-002	
0.70	1.571-001	-2.441+000	1.229-004	1.424-003	3.136-001	2.787-001	9.418-003	1.345-003	-2.759-001	3.377-002	-8.645-003	-4.254-002	
0.80	7.313-002	-1.694+000	2.095-004	1.750-003	3.525-001	2.572-001	1.001-002	-5.597-004	-1.408-001	5.085-002	-7.729-003	-2.837-002	
0.90	4.204-002	-1.294+000	1.364-004	2.059-003	3.792-001	2.349-001	9.501-003	-1.427-003	-7.351-002	4.251-002	-7.456-003	-2.010-002	
1.00	2.390-002	-1.039+000	5.238-004	2.343-003	3.960-001	2.143-001	8.738-003	-2.365-003	-3.798-002	2.905-002	-7.035-003	-1.359-002	
1.10	1.075-002	-8.544-001	7.766-004	2.576-003	4.057-001	1.971-001	8.286-003	-2.341-003	-1.859-002	1.736-002	-5.749-003	-7.705-003	
1.20	1.959-003	-7.061-001	1.091-003	2.726-003	4.108-001	1.843-001	8.401-003	-2.388-003	-5.620-003	8.640-003	-2.912-003	-2.103-003	
1.30	1.021-003	-5.741-001	1.467-003	2.748-003	4.133-001	1.757-001	8.915-003	-3.065-003	7.742-002	-6.649-004	2.493-003	2.963-003	
1.40	2.170-002	-4.444-001	1.894-003	2.511-003	4.138-001	1.715-001	8.789-003	-5.251-003	3.329-002	-2.182-002	1.278-002	5.945-003	
1.50	1.111-001	-3.348-001	2.020-003	1.667-003	4.135-001	1.757-001	8.738-003	-2.365-003	-3.798-002	2.305-002	-7.035-003	-1.359-002	
1.60	2.084-001	-3.859-001	7.063-004	1.216-003	4.287-001	1.866-001	-3.356-004	-1.733-003	-7.384-002	-7.751-002	2.326-002	-3.135-002	
1.70	1.426-001	-4.193-001	8.836-005	2.229-003	4.486-001	1.803-001	4.555-003	-2.550-003	-8.645-002	-5.413-003	1.412-003	-3.046-002	
1.80	9.004-002	-3.747-001	2.079-004	2.915-003	4.603-001	1.706-001	8.066-003	1.210-003	-5.906-002	2.539-002	-6.023-003	-2.275-002	
1.90	6.384-002	-3.212-001	4.101-004	3.346-003	4.691-001	1.614-001	9.136-003	-9.715-004	-3.464-002	3.293-002	-8.564-003	-1.700-002	
2.00	4.853-002	-2.710-001	6.388-004	3.677-003	4.759-001	1.521-001	8.817-003	-2.745-003	-1.714-002	3.097-002	-9.860-003	-1.259-002	
2.10	3.724-002	-2.241-001	9.072-004	3.928-003	4.805-001	1.426-001	7.819-003	-3.778-003	-5.839-003	2.511-002	-1.052-002	-8.538-003	
2.20	2.731-002	-1.787-001	1.207-003	4.076-003	4.829-001	1.339-001	6.674-003	-4.058-003	4.238-004	1.836-002	-1.040-002	-4.485-003	
2.30	1.745-002	-1.330-001	1.500-003	4.124-003	4.835-001	1.264-001	5.725-003	-3.793-003	3.343-003	1.250-002	-9.183-003	-5.175-004	
2.40	9.378-003	-4.514-002	1.708-003	3.971-003	4.828-001	1.208-001	5.123-003	-3.200-003	4.560-003	7.956-003	-6.614-003	2.959-003	
2.50	2.707-002	-3.371-002	1.738-003	3.747-003	4.819-001	1.172-001	4.794-003	-2.472-003	5.089-003	4.090-003	-2.669-003	5.130-003	
2.60	9.545-004	2.193-002	1.494-003	3.559-003	4.815-001	1.154-001	4.752-003	-1.532-003	4.478-003	1.316-004	1.925-003	4.844-003	
2.70	6.847-003	7.884-002	1.048-003	3.648-003	4.826-001	1.146-001	5.361-003	-4.147-004	1.535-003	-2.760-003	5.007-003	1.719-003	
2.80	1.819-002	1.319-001	7.024-004	4.082-003	4.849-001	1.138-001	6.848-003	1.834-004	-2.160-003	-2.074-003	4.700-003	-2.030-003	
2.90	2.858-002	1.816-001	6.250-004	4.626-003	4.880-001	1.123-001	8.514-003	-3.532-004	-3.082-003	1.242-003	2.171-003	-3.858-003	
3.00	3.542-002	2.332-001	7.250-004	5.112-003	4.914-001	1.102-001	9.545-003	-1.741-003	-5.862-004	3.950-003	-6.329-004	-3.590-003	
3.10	3.041-002	2.913-001	9.081-004	5.266-003	4.948-001	1.072-001	9.692-003	-3.358-003	3.543-003	4.260-003	-2.951-003	-1.911-003	
3.20	4.156-002	3.595-001	1.147-003	5.884-003	4.978-001	1.035-001	9.097-003	-4.709-003	7.528-003	2.103-003	-4.604-003	8.018-004	
3.30	4.258-002	4.424-001	1.434-003	6.179-003	5.000-001	9.919-002	8.084-003	-5.512-003	1.026-002	-1.746-003	-5.416-003	4.406-003	
3.40	4.312-002	5.470-001	1.748-003	6.394-003	5.010-001	9.470-002	7.022-003	-5.711-003	1.145-002	-6.279-003	-5.133-003	8.777-003	
3.50	4.401-002	6.949-001	2.051-003	6.524-003	5.010-001	9.059-002	6.217-003	-5.437-003	1.166-002	-1.074-002	-3.484-003	1.375-002	
3.60	4.649-002	8.774-001	2.305-003	6.588-003	5.002-001	8.724-002	5.836-003	-4.937-003	1.170-002	-1.514-002	-2.098-004	1.923-002	
3.70	5.111-002	1.171+000	2.691-003	6.629-003	4.990-001	8.488-002	5.899-003	-4.478-003	1.266-002	-2.044-002	5.055-003	2.534-002	
3.80	7.148-002	1.461+000	2.620-003	6.696-003	4.977-001	8.356-002	6.309-003	-4.299-003	1.550-002	-2.942-002	1.324-002	3.308-002	
3.90	1.366-001	2.422+000	2.751-003	6.967-003	4.967-001	8.322-002	6.878-003	-4.621-003	2.237-002	-5.030-002	2.820-002	4.670-002	
4.00	7.529-001	9.077+000	3.122-003	7.050-003	4.959-001	8.434-002	7.088-003	-5.970-003	3.983-002	-1.475-001	8.620-002	1.001-001	
4.50	8.433-002	-1.183+000	2.593-003	8.065-003	5.065-001	7.644-002	6.283-003	-7.371-003	7.074-003	4.544-002	-2.570-002	-2.927-002	
5.00	7.544-002	-4.155-001	2.987-003	8.914-003	5.062-001	6.487-002	2.947-003	-2.101+003	-1.557-002	1.360-002	-7.264-004	-2.643-002	

Table A32b
Pressure Coefficients
 $T = 0.1 \quad H = 5.0$

k_d	p_1^0	p_2^0	p_3^0	p_1^{+0}	p_2^{+0}	p_3^{+0}
0.01	5.198-009	-2.176-002	2.188-010	-1.000-003	5.744-009	-2.625-002
0.05	3.140-006	-1.197-001	1.313-007	-5.004-003	3.648-006	-1.310-001
0.10	4.451-005	-2.456-001	1.823-006	-1.003-002	4.794-005	-2.606-001
0.15	1.715-004	-3.852-001	6.782-006	-1.514-002	1.792-004	-3.875-001
0.20	2.558-004	-5.498-001	9.668-006	-2.039-002	2.668-004	-5.107-001
0.30	-5.671-003	-1.049+000	-1.749-004	-3.218-002	-4.137-003	-7.437-001
0.40	-1.342-001	-2.371+000	-2.930-003	-5.093-002	-6.128-002	-9.603-001
0.50	-1.648-001	-2.054+000	-1.510-001	-1.694-002	-3.620-001	-2.314-001
0.60	-8.057-001	2.535+000	6.569-003	-1.715-002	5.091-001	-1.087+000
0.70	-3.361-001	1.809+000	1.075-002	-3.590-002	5.477-001	-1.266+000
0.80	-2.059-001	8.538-001	1.360-002	-4.672-002	6.628-001	-1.372+000
0.90	-1.356-001	5.075-001	1.611-002	-5.555-002	8.095-001	-1.440+000
1.00	-8.414-002	4.157-001	1.807-002	-6.367-002	9.726-001	-1.477+000
1.10	-4.022-002	2.617-001	1.902-002	-7.174-002	1.143+000	-1.480+000
1.20	-1.307-003	1.064-001	1.794-002	-8.047-002	1.311+000	-1.448+000
1.30	-2.404-002	-8.504-002	1.209-002	-9.073-002	1.467+000	-1.370+000
1.40	-2.275-002	-3.729-001	-6.554-003	-1.013-001	1.604+000	-1.221+000
1.50	-4.246-001	-7.331-001	-5.315-002	-4.821-002	1.773+000	-9.308-001
1.60	-1.125+000	-3.134-001	-5.710-002	-4.411-003	2.189+000	-8.590-001
1.70	-9.182-001	2.702-001	5.852-003	1.786-002	2.483+000	-6.237-001
1.80	-6.259-001	3.916-001	3.663-002	5.449-003	2.623+000	-5.049-001
1.90	-4.458-001	3.915-001	4.976-002	-5.321-003	2.731-000	-3.108-001
2.00	-3.262-001	3.671-001	5.486-002	-1.249-002	2.821+000	-7.553-002
2.10	-2.367-001	3.369-001	5.627-002	-1.710-002	2.887+000	-1.859-001
2.20	-1.631-001	3.035-001	5.425-002	-1.976-002	2.925+000	4.668-001
2.30	-9.853-002	2.645-001	4.866-002	-2.060-002	2.938+000	7.623-001
2.40	-4.148-002	2.145-001	3.895-002	-1.872-002	2.901+000	1.071+000
2.50	1.103-003	1.454-001	2.470-002	-1.193-002	2.838+000	1.391+000
2.60	7.748-003	5.710-002	8.363-003	4.000-003	2.747+000	1.720+000
2.70	-4.443-002	-1.046-002	-1.719-003	3.032-002	2.635+000	2.044+000
2.80	-1.313-001	-3.583-002	1.439-003	5.757-002	2.498+000	2.345+000
2.90	-1.978-001	4.809-003	1.162-002	7.555-002	2.320+000	2.620+000
3.00	-2.271-001	6.519-002	2.066-002	8.480-002	2.099+000	2.873+000
3.10	-2.311-001	1.240-001	2.507-002	8.965-002	1.839+000	3.107+000
3.20	-2.219-001	1.771-001	2.537-002	9.291-002	1.548+000	3.318+000
3.30	-2.064-001	2.263-001	2.244-002	9.590-002	1.229+000	3.502+000
3.40	-1.879-001	2.767-001	1.702-002	9.924-002	8.856-001	3.654+000
3.50	-1.679-001	3.266-001	9.789-003	1.034-001	5.218-001	3.771+000
3.60	-1.476-001	3.871-001	1.410-003	1.086-001	3.849+000	-1.300-002
3.70	-1.263-001	4.681-001	-7.297-003	1.153-001	3.887+000	8.657-003
3.80	-1.114-001	5.950-001	-1.529-002	1.237-001	3.882+000	-1.004-002
3.90	-9.334-002	8.678-001	-2.114-002	1.341-001	3.831+000	-9.238-002
4.00	3.469-002	2.013+000	-1.997-002	1.503-001	-1.434+000	3.727+000
4.50	2.402-001	-7.412-001	-7.148-002	1.060-001	-3.375+000	2.657+000
5.00	5.768-001	-1.244-001	-1.482-002	-1.717-003	6.760-001	2.246-003
						8.540-002
						-4.037-003
						-5.106-001
						-3.032-001
						-4.810-002
						6.111-001
						2.574-002
						-3.465-002
						7.149-003
						-1.748-001
						3.262-001
						-2.143-002
						3.692-001
						-4.281-003
						8.239-002
						-1.084+000
						6.452-002
						-1.079+000
						6.861-002
						5.472-002
						-1.416-001
						1.852-002
						-9.367-001
						-4.665-002
						3.318+000
						-3.275-002
						9.647-001
						1.428-002
						5.472-002
						-1.462-003
						2.638-001
						-2.638-001
						4.263-003
						-2.638-001
						6.496-003
						-2.185-001
						1.540-002
						-4.760-001
						3.007-002
						-6.932-001
						8.823-002
						-1.084-001
						7.609-003
						-1.084-001
						6.287-002
						-3.862-002
						1.041-002
						-1.041-002
						6.289-002
						-1.067-002
						2.884-002
						-6.889-001
						4.065-002
						-8.822-001
						5.367-002
						-1.018+000
						2.232-002
						-2.932-001
						2.820-001
						-4.065-002
						2.932-001
						-2.884-002
						3.460-001
						-3.460-001
						3.779-001
						-1.877-002
						4.529-001
						-8.589-003
						-1.906-001
						3.861-001
						-1.416-001
						6.452-002
						-1.084+000
						1.852-002
						-9.367-001
						-4.665-002
						3.318+000
						-3.275-002
						9.647-001
						1.428-002
						5.472-002
						-1.462-003
						2.638-001
						-2.638-001
						4.263-003
						-2.638-001
						6.496-003
						-2.185-001
						1.540-002
						-4.760-001
						3.007-002
						-6.932-001
						8.823-002
						-1.084-001
						7.609-003
						-1.084-001
						6.287-002
						-3.862-002
						1.041-002
						-1.041-002
						6.289-002
						-1.067-002
						2.884-002
						-6.889-001
						4.065-002
						-8.822-001
						5.367-002
						-1.018+000
						2.232-002
						-2.932-001
						2.820-001
						-4.065-002
						2.932-001
						-2.884-002
						3.460-001
						-3.460-001
						3.779-001
						-1.877-002
						4.529-001
						-8.589-003
						-1.906-001
						3.861-001
						-1.416-001
						6.452-002
						-1.084+000
						1.852-002
						-9.367-001
						-4.665-002
						3.318+000
						-3.275-002
						9.647-001
						1.428-002
						5.472-002
						-1.462-003
						2.638-001
						-2.638-001
						4.263-003
						-2.638-001
						6.496-003
						-2.185-001
						1.540-002
						-4.760-001
						3.007-002
						-6.932-001
						8.823-002
						-1.084-001
						7.609-003
						-1.084-001
						6.287-002
						-3.862-002
						1.041-002
						-1.041-002
						6.289-002
						-1.067-002
						2.884-002
						-6.889-001
						4.065-002
						-8.822-001
						5.367-002
						-1.018+000
						2.232-002
						-2.932-001
						2.820-001
						-4.065-002
						2.932-001
						-2.884-002
						3.460-001
						-3.460-001
						3.779-001
						-1.877-002
						4.529-001
						-8.589-003
						-1.906-001
						3.861-001
						-1.416-001
						6.452-002
						-1.084+000
						1.852-002
						-9.367-001
						-4.665-002

k_u	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	9.619-005	7.682-007	1.014-004	1.455-004	8.923-003	2.114-005
0.05	2.422-003	1.809-005	3.620-003	4.436-002	5.258-004	7.659-004
0.10	9.921-003	7.503-003	1.427-002	8.711-002	2.069-003	3.787-003
0.15	2.732-002	1.693-004	1.693-003	1.268-001	7.035-002	1.314-002
0.20	4.454-002	2.819-004	1.970-003	5.392-002	4.543-003	1.790-003
0.30	1.331-001	5.940-004	2.913-003	1.112-001	1.616-002	1.270-002
0.40	4.861-001	1.121-001	1.776-001	2.415-001	1.480-002	2.415-001
0.50	1.175-001	5.831-003	2.018-001	1.560-001	2.759-002	2.590-002
0.60	9.115-001	9.830-005	3.017-003	3.141-001	6.309-002	2.775-000
0.70	1.881-001	4.899-004	2.676-001	3.141-001	9.298-003	4.276-003
0.80	2.645+000	4.899-004	3.288-001	2.872-001	1.828-002	1.072-003
0.90	1.739+000	5.946-004	3.690-001	2.637-001	1.934-002	2.892-003
1.00	4.605-002	1.435-003	3.963-001	2.390-001	1.800-002	5.406-003
1.10	2.581-002	2.228+000	4.134-001	2.179-001	1.621-002	4.735-002
1.10	1.174-002	8.755-001	4.229-001	1.997-001	1.515-002	6.074-003
1.120	2.4937-003	4.457-003	9.084-003	1.863-001	1.528-002	5.933-003
1.170	6.378-004	5.838-003	4.994-003	1.777-001	1.618-002	7.180-003
1.40	7.792-002	4.657-001	4.304-001	1.740-001	1.729-002	4.683-003
1.50	9.939-002	7.905-003	4.315-001	1.782-001	8.068-003	1.542-002
1.70	2.067-002	2.853-003	4.478-001	1.870-001	6.346-004	3.437-003
1.70	1.460-001	3.467-004	4.663-001	1.790-001	9.692-003	3.772-003
1.80	9.299-002	9.422-004	9.433-003	1.697-001	1.606-002	3.868-005
1.90	6.507-002	1.103-002	4.854-001	1.610-001	1.729-002	4.683-003
2.00	9.982-002	2.993-001	4.925-001	1.518-001	1.582-002	8.095-003
2.10	3.752-002	1.883-003	4.975-001	1.422-001	1.325-002	9.682-003
2.20	2.681-002	5.413-003	5.001-001	1.331-001	1.073-002	9.661-003
2.230	1.712-002	1.290-002	5.006-001	1.252-001	8.964-003	8.553-003
2.40	8.649-003	7.068-004	4.958-001	1.194-001	8.119-003	6.959-003
2.50	2.366-003	6.984-003	4.988-001	1.157-001	7.934-003	5.103-003
2.60	6.848-004	5.733-003	4.988-001	1.138-001	8.458-003	3.488-003
2.70	6.528-003	3.943-003	4.993-001	1.128-001	1.037-002	1.651-003
2.80	1.779-002	2.689-003	5.013-001	1.119-001	1.369-002	1.391-003
2.90	2.740-002	2.618-003	5.041-001	1.107-001	1.673-002	3.512-003
3.00	3.362-002	3.307-003	5.078-001	1.090-001	1.797-002	7.018-003
3.10	3.588-002	4.384-003	5.111-001	1.065-001	1.722-002	1.047-002
3.20	3.572-002	5.681-003	5.146-001	1.030-001	1.507-002	1.288-002
3.30	1.401-002	2.735-001	5.172-001	9.852-002	1.241-002	1.381-002
3.40	3.149-002	4.340-003	5.145-001	9.380-002	1.013-002	1.343-002
3.50	2.871-002	9.365-003	5.186-001	8.948-002	7.738-003	1.226-002
3.60	2.603-002	1.093-002	5.178-001	8.598-002	8.396-003	1.093-002
3.70	2.391-002	1.034-002	5.165-001	8.361-002	8.954-003	9.960-003
3.80	2.302-002	1.042-				

λ_{α}	p_1^0	p_2^0	p_3^0	p_1^{90}	p_2^{90}	p_3^{90}
1.154-008	-2.251-002	1.026-009	-2.000-003	1.410-008	-2.750-002	1.127-008
7.134-004	-1.133-001	6.299-007	-1.000-002	8.665-006	-1.372-001	7.010-006
2.319-001	9.515-005	-2.003-002	1.311-004	-9.726-001	1.116-004	-2.217-001
5.190-004	3.623-001	4.335-006	4.043-002	5.991-004	-2.263-001	5.618-004
1.449-003	-5.138-001	1.149-004	-4.043-002	1.598-003	-5.318-001	1.774-003
3.072-003	9.563-031	2.087-004	-6.288-002	3.203-003	-7.688-001	9.476-003
-5.737-002	-9.613-000	-2.403-003	-9.513-002	-2.515-002	-9.818-001	4.075-002
-5.077-000	9.766-000	1.312-001	-2.120-001	-6.452-001	-8.187-001	6.419-002
1.120-000	3.112-000	1.133-002	-2.703-002	5.746-001	-1.099-000	-3.075-002
-4.087-001	1.478-000	2.199-002	-7.213-002	5.969-001	-1.291-000	-3.492-002
9.453-001	9.453-001	2.781-002	-9.535-002	2.725-001	-1.390-000	-3.267-002
1.669-001	6.605-001	3.256-002	-1.136-001	8.842-001	-1.448-000	-3.008-002
1.120-001	4.644-001	3.599-002	-1.298-001	1.063-000	-1.472-000	-2.391-002
-6.799-002	3.027-001	3.743-002	-1.453-001	1.246-000	-1.460-000	-1.362-002
-3.036-002	1.445-001	3.520-002	-1.613-001	1.246-000	-1.408-000	-2.913-003
-4.851-003	-4.469-002	2.446-002	-1.798-001	1.598-000	-1.306-000	-1.371-003
-4.191-002	-3.268-001	-9.500-003	-1.990-001	1.746-000	-1.130-000	-2.917-002
-4.072-001	-6.983-001	-9.728-002	-1.767-001	1.928-000	-8.193-001	-1.225-001
-1.470-000	-6.327-001	-1.110-001	-1.192-002	2.346-000	-5.385-001	-1.403-001
-9.514-001	2.786-001	1.719-002	3.436-002	2.614-000	-8.867-001	6.405-004
-6.504-001	4.048-001	7.840-002	7.448-003	2.730-000	-3.308-000	7.095-002
-4.646-001	4.022-001	1.027-001	-1.525-002	2.818-000	-9.642-002	1.028-001
-3.404-001	3.733-001	1.118-001	-3.010-002	2.888-000	1.757-001	1.165-001
-2.478-001	3.772-001	1.121-001	-3.895-002	2.931-000	4.698-001	1.132-001
-2.716-001	2.973-001	1.053-001	-8.298-002	2.942-000	7.778-001	9.250-002
-1.066-001	2.525-001	9.192-002	-4.192-002	2.915-000	1.096-000	5.886-002
-5.019-002	1.981-001	7.128-002	-3.441-002	2.848-000	1.423-000	2.331-002
-8.117-003	1.266-001	4.298-002	-1.682-002	2.744-000	1.756-000	1.124-003
-7.449-004	3.868-002	1.199-002	-1.885-002	2.608-000	2.090-000	5.121-003
-5.189-002	-6.151-002	-5.368-003	7.298-002	2.448-000	2.409-000	2.707-002
-1.392-001	-5.868-002	3.679-003	1.279-001	2.255-000	2.696-000	3.087-002
-2.057-001	-1.588-002	2.641-002	1.630-001	2.015-000	2.952-000	-3.447-004
-2.327-001	4.788-002	4.505-002	1.802-001	1.728-000	3.183-000	4.884-002
-2.326-001	1.095-001	5.412-002	1.885-001	1.405-000	3.390-000	-9.373-002
-2.178-001	1.638-001	5.445-002	1.937-001	1.054-000	3.569-000	-1.205-001
-1.964-001	2.118-001	4.777-002	1.982-001	6.797-001	3.712-000	-1.206-001
-1.723-001	2.561-001	3.561-002	2.034-001	2.868-001	3.815-000	-9.401-002
-1.987-001	2.987-001	1.928-002	2.104-001	-1.205-001	3.874-000	-5.099-002
-1.242-001	3.421-001	1.348-004	2.197-001	-5.376-001	3.887	

Table A34a
Impedance Coefficients
 $T = 0.3$ $H = 5.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	8.551-005	3.592-002	1.697-006	2.080-004	1.560-004	9.381-003
0.05	2.153-003	4.215-006	1.038-003	3.879-003	3.879-003	4.661-002
0.10	8.825-003	3.721-001	1.653-004	2.661-003	1.526-002	9.144-002
0.15	2.078-002	5.849-001	3.605-004	3.342-002	1.342-002	1.329-001
0.20	3.980-002	8.368-001	5.163-004	5.778-002	3.059-003	1.696-002
0.30	1.216-001	1.602+000	1.287-003	5.964-003	1.170-001	2.252-001
0.40	4.865-001	3.580+000	2.452-002	1.842-001	1.842-001	2.508-001
0.50	2.793-001	1.306+001	2.105-002	6.725-003	1.118-001	1.700-001
0.60	5.712-001	4.770+000	4.581-004	6.578-003	2.938-001	3.140-001
0.70	1.417-001	-2.456+000	1.287-003	9.787-003	3.490-001	2.900-001
0.80	6.801-002	-1.682+000	1.190-003	3.525-003	1.221-002	2.665-001
0.90	3.973-002	-1.285+000	1.666-002	4.497-002	4.470-001	2.419-001
1.00	2.257-002	-1.036+000	5.390-003	1.627-002	4.326-001	2.188-001
1.10	1.007-002	-8.563-001	7.110-003	1.753-002	4.415-001	1.988-001
1.20	1.878-003	-7.130-001	1.036-002	1.805-002	4.454-001	1.861-001
1.30	9.079-004	-5.866-001	1.334-002	1.755-002	4.468-001	1.776-001
1.40	2.027-002	-4.615-001	1.666-002	1.497-002	4.470-001	1.748-001
1.50	1.130-001	-3.524-001	4.716-002	7.100-003	4.500-001	1.811-001
1.60	2.115-001	-4.219-001	4.717-003	4.419-003	4.702-001	1.857-001
1.70	1.397-001	-4.523-001	9.554-004	1.373-002	4.849-001	1.749-001
1.80	8.975-002	-4.117-001	2.893-003	1.909-002	4.935-001	1.665-001
1.90	6.834-002	-3.651-001	5.378-003	2.219-002	5.019-001	1.588-001
2.00	4.820-002	-3.220-001	8.095-003	2.416-002	5.093-001	1.488-001
2.10	3.552-002	-2.817-001	1.059-002	2.521-002	5.145-001	1.400-001
2.20	2.453-002	-2.624-001	1.359-002	2.514-002	5.171-001	1.305-001
2.30	1.492-002	-2.032-001	1.568-002	2.376-002	5.174-001	1.223-001
2.40	6.890-003	-1.629-001	1.617-002	2.161-002	5.163-001	1.163-001
2.50	1.361-003	-1.207-001	1.514-002	1.958-002	5.150-001	1.125-001
2.60	8.761-004	-7.632-002	1.206-002	1.862-002	5.144-001	1.105-001
2.70	8.264-003	-3.346-002	8.081-003	2.061-002	5.151-001	1.093-001
2.80	2.033-002	1.894-003	6.076-003	2.535-002	5.165-001	1.083-001
2.90	2.973-002	3.065-002	6.844-003	3.039-002	5.187-001	1.075-001
3.00	3.401-002	5.750-002	9.345-003	3.423-002	5.219-001	1.064-001
3.10	3.432-002	8.460-002	1.256-002	3.680-002	5.259-001	1.043-001
3.20	3.213-002	1.195-001	3.833-002	3.833-002	5.298-001	1.007-001
3.30	2.862-002	1.575-001	1.913-002	3.871-002	5.327-001	9.598-002
3.40	2.866-002	2.013-001	2.163-002	3.833-002	5.340-001	9.085-002
3.50	2.068-002	2.324-002	2.368-002	3.764-002	5.333-001	8.618-002
3.60	1.676-002	3.118-001	2.399-002	3.713-002	5.326-001	8.253-002
3.70	1.301-002	3.836-001	2.410-002	3.722-002	5.310-001	8.010-002
3.80	1.008-002	4.727-001	2.400-002	3.826-002	5.295-001	7.891-002
3.90	9.551-003	5.868-001	2.430-002	4.026-002	5.284-001	7.877-002
4.00	1.379-002	7.380-001	2.563-002	4.290-002	5.283-001	7.936-002
4.50	2.810+000	1.288+001	4.703-002	3.923-002	5.411-001	7.541-002
4.70	4.219-002	-1.040+000	4.374-002	3.785-002	5.366-001	6.147-002

Table A34b
Pressure Coefficients
 $T = 0.3 \quad H = 5.0$

k_d	p_1^0	p_2^0	p_3^0	p_4^0	p_5^0	p_6^0	p_7^0	p_8^0	p_9^0
1.588-008	-2.126-002	2.242-009	-3.000-003	2.148-004	-2.875-002	1.596-008	-2.125-002	2.248-009	-2.999-003
9.852-006	-1.071-001	1.381-006	-1.500-002	1.324-005	-1.434-001	9.935-006	-1.058-001	1.393-006	-1.485-002
1.538-004	-2.194-001	2.110-005	-3.001-002	2.027-004	-2.846-001	1.580-004	-2.089-001	2.167-005	-2.880-002
7.458-004	-3.435-001	9.847-005	-4.510-002	9.486-004	-4.216-001	7.949-004	-3.068-001	1.050-004	-4.098-002
2.189-003	-4.890-001	2.736-004	-6.044-002	2.649-003	-5.529-001	2.509-003	-3.956-001	3.132-004	-5.061-002
7.397-003	-9.254-001	7.748-004	-9.381-002	7.809-003	-7.941-001	1.349-002	-5.342-001	1.395-003	-5.939-002
-3.623-002	-2.054-000	-2.488-003	-1.431-001	-1.533-002	-1.004-000	6.110-002	-5.611-001	4.374-003	-4.992-002
-1.442-001	-9.571-000	-4.032-001	-2.628-001	-6.516-001	-1.637-001	1.889-000	-4.492-001	5.293-002	-3.039-002
-7.627-001	2.542-000	2.759-002	-6.864-002	5.446-001	-1.192-000	-5.090-002	-1.271-000	1.453-003	8.133-003
-3.186-001	1.284-000	3.437-002	-1.197-001	6.118-001	-1.337-000	-4.897-002	-1.051-000	4.697-003	7.316-002
-1.956-001	8.399-001	4.252-002	-1.522-001	7.627-001	-1.418-000	-4.698-002	-9.247-001	8.444-003	1.470-001
-1.286-001	5.918-001	4.888-002	-1.788-001	9.455-001	-1.462-000	-4.404-002	-7.647-001	1.308-002	2.231-001
-8.055-002	4.147-001	5.297-002	-2.025-001	1.142-000	-1.471-000	-3.513-002	-5.682-001	1.710-002	2.919-001
-4.208-002	2.640-001	5.399-002	-2.246-001	1.341-000	-1.441-000	-1.966-002	-3.481-001	1.716-002	3.440-001
-9.563-003	1.123-001	4.959-002	-2.473-001	1.532-000	-1.367-000	-3.946-003	-1.229-001	9.301-003	3.726-001
1.029-002	-7.563-002	3.203-002	-2.736-001	1.707-000	-1.237-000	-2.589-003	8.968-002	-9.944-003	3.746-001
-4.076-002	-3.160-001	-2.335-002	-3.001-001	1.867-000	-1.023-000	-4.742-002	2.813-001	-4.337-002	3.543-001
-4.816-002	-7.398-001	-1.642-001	-2.480-001	2.088-000	-6.691-001	-1.957-001	5.256-001	-7.795-002	3.370-001
-1.193-000	-2.116-001	-1.378-001	1.517-002	2.534-000	-4.348-001	-1.801-001	9.722-001	-3.027-002	2.854-001
-9.013-001	3.498-001	5.674-002	4.584-002	2.730-000	-3.675-001	3.183-002	1.133-000	-7.705-003	1.168-001
-6.037-001	4.375-001	1.353-001	-2.263-003	2.812-000	-1.582-001	1.285-001	1.145-000	-2.698-002	-6.418-002
-4.251-001	4.225-001	1.641-001	-3.760-002	2.879-000	-1.216-001	1.741-001	1.099-000	-5.412-002	-2.447-001
-3.050-001	3.862-001	1.719-001	-5.982-002	2.928-000	4.318-001	1.915-001	9.949-001	-8.229-002	-4.157-001
-2.153-001	3.430-001	1.664-001	-7.210-002	2.947-000	7.570-001	1.803-001	8.349-001	-1.047-001	-5.637-001
-1.437-001	2.957-001	1.511-001	-7.508-002	2.928-000	1.090-000	1.417-001	6.399-001	-1.118-001	-6.745-001
-8.377-002	2.435-001	1.265-001	-6.845-002	2.865-000	1.427-000	8.611-002	4.307-001	-9.590-002	-7.415-001
-3.341-002	1.812-001	4.231-002	-5.098-002	2.757-000	1.768-000	3.198-002	2.241-001	-5.745-002	-7.681-001
7.313-004	1.010-001	4.814-002	-1.682-002	2.608-000	2.109-000	1.247-003	2.606-002	-6.658-003	-7.582-001
-4.690-003	2.882-003	3.712-003	4.588-002	2.427-000	2.442-000	9.587-001	-1.765-001	3.574-002	-7.065-001
-7.342-002	-7.647-002	-1.390-002	1.359-001	2.219-000	2.748-000	3.760-002	-4.098-001	5.204-002	-5.906-001
-1.729-001	-8.426-002	1.098-002	2.183-001	1.969-000	3.010-000	2.754-002	-6.575-001	5.875-002	-3.861-001
-2.403-001	-3.137-002	5.218-002	2.654-001	1.663-000	3.236-000	-3.727-002	-8.509-001	8.658-002	-1.096-001
-2.623-001	3.708-002	8.261-002	2.850-001	1.311-000	3.436-000	-1.215-001	-9.475-001	1.394-001	1.985-001
-2.549-001	9.842-002	9.629-002	2.922-001	9.264-001	3.608-000	-1.897-001	-9.441-001	2.053-001	5.063-001
-2.323-001	1.483-001	9.527-002	2.954-001	5.198-001	3.745-000	-2.191-001	-8.568-001	2.681-001	7.828-001
-2.029-001	1.880-001	8.255-002	2.987-001	9.760-002	3.839-000	-2.017-001	-7.136-001	3.087-001	1.007-000
-1.711-001	2.203-001	6.083-002	3.044-001	-3.354-001	3.883-000	-4.462-001	-5.456-001	3.112-001	1.166-000
-1.389-001	2.473-001	3.255-002	3.140-001	-7.750-001	3.875-000	-7.456-002	-3.777-001	2.694-001	1.256-000
-1.076-001	2.701-001	1.150-005	3.283-001	-1.216-000	3.812-000	-1.341-002	-2.242-001	1.887-001	1.276-000
-7.914-002	2.495-001	-3.419-002	3.445-001	-1.652-000	3.694-000	1.242-002	-4.808-002	8.218-002	1.220-000
-5.760-002	3.065-001	-6.656-002	3.750-001	-2.078-000	3.510-000	-1.381-002	3.727-002	-3.632-002	1.079-000
-4.897-002	3.264-001	-9.264-002	4.069-001	-2.489-000	3.287-000	-9.330-002	-1.605-001	-1.605-001	8.429-001
-5.756-002	3.616-001	-1.084-001	4.410-001	-2.880-000	2.999-000	-2.110-001	-2.887-001	-2.956-001	5.121-001
3.833-001	4.570-000	3.265-002	5.096-001	-4.410-000	9.272-000	-6.055-000	1.109-001	-1.086-000	-1.245-000
1.739-001	-5.128-001	-1.272-001	2.846-001	-4.509-000	-1.580-000	5.741-002	6.162-002	-7.687-002	-1.563-000
5.000-000	2.046-003	8.910-002	9.851-002	4.255-001	7.457-001	7.711-002	7.457-001	1.409-000	2.046-003

Table 35a
Impedance Coefficients
 $T = 0.5 \quad H = 5.0$

k_d	Z_1	Z_2	Z_3	Z_4	Z_5	Z_6
0.01	6.485-005	3.298-002	4.552-006	1.773-004	1.024-002	5.682-005
0.05	1.631-003	1.129-004	2.506-003	4.404-003	5.082-002	1.410-003
0.10	6.655-003	4.967-003	4.967-003	1.727-002	9.949-002	5.516-003
0.15	1.556-002	9.532-004	7.349-002	3.763-002	1.441-001	1.197-002
0.20	2.953-002	1.612-003	9.644-003	6.407-002	1.832-001	2.030-002
0.30	8.762-002	1.453-000	3.255-003	1.288-001	2.417-001	4.061-002
0.40	3.729-001	3.158-000	5.764-003	1.992-001	2.700-001	6.555-002
0.50	1.313-001	1.831-001	3.456-002	2.111-001	2.010-001	1.462-001
0.60	5.766-001	5.043-000	1.513-003	3.227-001	3.271-001	3.731-002
0.70	1.345-001	2.475-000	4.090-003	3.781-001	3.014-001	5.039-002
0.80	6.420-002	-1.676-000	7.027-003	4.191-001	2.763-001	4.790-002
0.90	3.708-002	-1.277-000	1.128-002	4.475-001	2.495-001	4.065-002
1.00	2.058-002	-1.029-000	1.684-002	3.913-002	2.242-001	3.365-002
1.10	8.929-003	-8.533-001	2.319-002	4.643-001	2.035-001	2.976-002
1.20	1.621-003	-7.143-001	2.985-002	4.754-001	1.888-001	2.923-002
1.30	7.767-004	-5.932-001	3.687-002	4.760-001	1.804-001	2.972-002
1.40	1.740-002	-6.737-001	4.443-002	4.763-001	1.784-001	2.543-002
1.50	1.018-001	-3.615-001	4.525-002	4.818-001	1.844-001	4.599-003
1.60	2.210-001	-6.199-001	1.247-002	5.021-001	1.845-001	7.977-004
1.70	1.535-001	-4.751-001	3.282-003	5.125-001	1.733-001	3.243-002
1.80	9.791-002	-4.443-001	1.136-002	5.201-001	1.672-001	3.995-002
1.90	6.788-002	-4.035-001	2.068-002	5.294-001	1.608-001	3.435-002
2.00	4.803-002	-3.643-001	2.974-002	5.381-001	1.517-001	2.830-002
2.10	3.297-002	-3.267-001	3.730-002	5.439-001	1.410-001	1.547-002
2.20	2.118-002	-2.901-001	4.255-002	5.463-001	1.305-001	1.006-002
2.30	1.202-002	-2.542-001	4.489-002	5.461-001	1.218-001	8.182-003
2.40	5.075-003	-2.185-001	3.993-002	5.445-001	1.155-001	8.671-003
2.50	7.162-004	-1.822-001	3.953-002	5.476-001	1.115-001	1.090-002
2.60	1.066-003	-1.444-001	3.090-002	5.415-001	1.094-001	1.555-002
2.70	9.373-003	-1.091-001	2.114-002	5.413-001	1.083-001	2.374-002
2.80	5.349-002	-8.280-002	1.829-002	5.849-002	1.081-001	3.324-002
2.90	3.395-002	-6.687-002	2.581-002	7.266-002	1.088-001	3.577-002
3.00	3.613-002	-5.387-002	3.868-002	8.019-002	1.091-001	2.953-002
3.10	3.641-002	-3.807-002	5.093-002	8.089-002	1.073-001	1.905-002
3.20	2.708-002	-1.817-002	5.994-002	7.767-002	1.031-001	9.460-003
3.30	2.166-002	5.129-003	6.541-002	7.320-002	9.751-002	3.221-003
3.40	1.698-002	1.088-002	6.799-002	6.919-002	9.186-002	5.286-004
3.50	1.289-002	5.868-002	6.457-002	6.621-001	8.702-002	5.525-004
3.60	9.065-003	8.881-002	6.808-002	6.591-002	8.348-002	2.323-003
3.70	5.473-003	1.221-001	6.751-002	5.586-001	8.141-002	4.989-003
3.80	2.673-003	1.594-001	4.830-002	7.191-002	5.568-001	7.595-003
3.90	1.940-003	2.040-001	7.245-002	7.761-002	5.558-001	8.588-003
4.00	4.505-003	2.488-001	8.120-002	8.209-002	5.561-001	8.300-002
4.50	3.444-002	5.947-001	1.097-001	5.353-002	5.695-001	-2.199-002
5.00	2.280-001	3.315-000	9.818-002	3.595-002	5.647-001	-1.338-002

k_u	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^{∞}	ρ_2^{∞}	ρ_3^{∞}
-0.01	2.321-008	-1.874-002	3.030-003	1.548-002	-8.015-001	3.916-008
-0.05	1.444-005	-9.444-002	3.822-006	-2.498-002	2.391-005	2.421-005
-0.10	1.278-004	-4.989-005	4.989-004	-3.085-001	2.350-008	3.758-004
-0.15	1.127-003	-3.917-001	2.808-004	-7.473-002	1.835-004	1.811-003
-0.20	3.446-003	-4.281-001	8.116-004	-9.969-002	1.768-003	5.357-003
-0.30	1.548-002	-8.015-001	3.030-003	1.548-002	-8.453-001	2.284-002
-0.40	2.206-002	-1.727-003	3.167-003	-2.247-001	2.555-002	6.065-002
-0.50	5.529-000	-1.083-001	-2.863-001	-5.548-001	5.493-001	1.912-001
-0.60	7.700-001	-2.602-000	4.273-002	-1.741-001	5.983-001	9.126-002
-0.70	3.063-001	1.262-000	6.128-002	-2.176-001	6.933-001	6.484-002
-0.80	-1.827-001	8.210-001	7.325-002	-2.731-001	8.100-001	2.870-001
-0.90	1.161-001	5.772-002	8.067-002	-3.179-001	1.810-001	7.706-002
-1.00	-7.145-000	4.035-001	8.203-002	-4.035-001	1.379-000	5.422-002
-1.10	3.865-002	2.563-001	8.200-002	-3.877-001	1.351-000	3.354-002
-1.20	-1.294-002	1.102-001	7.333-002	-4.187-001	1.759-000	1.330-002
-1.30	1.206-003	-6.810-002	4.565-002	-4.535-001	1.946-000	1.453-001
-1.40	-4.721-002	3.430-001	3.841-002	-4.869-001	2.118-000	6.162-001
-1.50	-4.532-001	-7.221-001	-2.572-001	-4.024-001	2.353-000	5.697-001
-1.60	-1.230-000	-2.401-001	-2.129-001	3.219-002	2.770-000	9.323-001
-1.70	-9.387-001	3.957-001	1.309-001	7.351-002	2.888-000	1.117-000
-1.80	-6.047-001	4.918-001	2.891-001	-2.772-002	2.908-000	1.879-001
-1.90	-4.647-001	4.651-001	2.891-001	-9.772-002	2.923-000	1.849-001
-2.00	-2.746-001	4.108-001	2.830-001	-1.373-001	2.912-000	1.197-001
-2.10	-1.846-001	3.449-001	2.588-001	-1.483-001	2.872-000	1.383-000
-2.20	-1.195-001	2.862-001	2.196-001	-1.360-001	2.775-000	1.003-000
-2.30	-6.911-002	2.270-001	1.738-001	-1.098-001	2.621-000	7.083-001
-2.40	-2.853-002	1.538-001	1.173-001	-6.477-002	2.412-000	3.820-001
-2.50	-2.764-002	6.900-002	5.119-002	6.227-003	2.158-000	4.455-002
-2.60	1.377-002	-3.430-002	1.345-002	1.201-001	1.868-000	2.284-002
-2.70	-9.142-002	-1.252-001	-3.464-002	2.813-001	1.566-000	5.932-001
-2.80	-2.153-001	-1.389-001	2.556-002	4.293-001	1.172-000	1.609-001
-2.90	-3.068-001	-6.774-002	1.244-001	5.036-001	7.346-001	2.229-001
-3.00	-2.751-001	2.648-002	1.984-001	5.124-001	2.565-001	1.481-000
-3.10	-2.951-001	1.013-001	2.241-001	4.950-001	-2.347-001	1.411-001
-3.20	-2.561-001	1.045-001	2.121-001	6.787-001	-7.253-001	6.165-002
-3.30	-2.100-001	1.776-001	1.763-001	4.733-001	-1.210-000	1.609-002
-3.40	-1.664-001	1.932-001	1.271-001	4.803-001	-2.741-001	8.577-003
-3.50	-1.255-001	2.005-001	7.035-002	4.980-001	-3.495-001	1.063-002
-3.60	-8.692-002	2.004-001	1.111-002	5.297-001	-2.587-000	-7.049-003
-3.70	-5.151-002	1.910-001	-6.888-002	5.744-001	-2.998-000	3.108-003
-3.80	-2.433-002	1.695-001	-9.765-002	6.358-001	-3.373-000	6.198-003
-3.90	-					

k_d	Z_1	Z_2	Z_3	Z_4	Z_5							
0.01	5.834-006	1.408-003	7.404-006	1.069-003	9.162-006	1.401-003	1.647-005	1.520-003	1.462-005	1.162-003	1.314-005	1.538-003
0.05	1.458-004	7.036-003	1.849-004	5.339-003	2.287-004	6.994-003	4.113-004	7.582-003	3.652-004	5.800-003	3.284-004	7.679-003
0.10	5.824-004	7.372-004	1.056-002	1.064-002	9.105-004	1.393-002	3.39-003	5.507-002	1.456-002	1.152-002	1.311-002	1.530-002
0.15	1.308-003	2.104-002	1.650-003	1.586-002	2.32-003	2.075-002	3.662-003	2.235-002	3.161-003	1.709-002	2.938-003	2.281-002
0.20	2.318-003	2.799-002	2.911-003	2.097-002	3.574-003	2.740-002	6.451-003	2.936-002	5.756-003	2.243-002	5.196-003	3.016-002
0.30	5.175-003	4.167-002	6.413-003	3.071-002	7.793-003	4.000-002	1.414-002	4.216-002	1.270-002	3.213-002	1.152-002	4.415-002
0.40	9.107-003	5.502-002	1.669-002	3.962-002	1.327-002	5.146-002	2.424-002	5.288-002	2.198-002	4.014-002	2.009-002	5.692-002
0.50	1.406-002	6.794-002	1.669-002	4.751-002	1.962-002	6.130-002	3.619-002	6.108-002	3.321-002	4.601-002	3.064-002	6.815-002
0.60	2.000-002	8.038-002	2.304-002	5.424-002	2.643-002	6.977-002	4.934-002	6.641-002	4.595-002	4.942-002	4.293-002	7.760-002
0.70	2.869-002	9.227-002	2.987-002	5.972-002	3.330-002	7.661-002	6.303-002	6.878-002	5.974-002	5.012-002	5.667-002	8.509-002
0.80	3.473-002	1.036-002	3.696-002	3.979-002	3.979-002	8.198-002	7.661-002	6.815-002	7.410-002	4.789-002	7.162-002	9.043-002
0.90	4.354-002	1.142-001	4.408-002	4.556-002	4.556-002	8.607-002	8.943-002	6.463-002	8.855-002	4.260-002	8.754-002	9.347-002
1.00	5.335-002	1.241-001	5.101-002	5.026-002	5.026-002	8.914-002	1.009-001	5.844-002	1.026-001	3.411-002	1.042-001	9.403-002
1.10	6.222-002	1.330-001	5.752-002	6.865-002	5.363-002	9.155-002	1.104-001	4.987-002	1.155-001	2.233-002	1.213-001	9.187-002
1.20	7.620-002	1.408-001	6.337-002	6.772-002	5.544-002	9.373-002	1.173-001	3.937-002	1.267-001	7.233-003	1.385-001	8.673-002
1.30	8.927-002	1.470-001	6.829-002	6.563-002	5.565-002	9.622-002	1.212-001	2.754-002	1.353-001	1.110-002	1.554-001	7.830-002
1.40	1.033-001	1.513-001	7.196-002	6.254-002	5.423-002	9.962-002	1.214-001	1.336-002	1.402-001	3.4237-002	1.712-001	6.630-002
1.50	1.181-001	1.534-001	7.406-002	5.869-002	5.448-002	1.046-001	1.177-001	3.363-003	1.404-001	5.589-002	1.851-001	5.055-002
1.60	1.329-001	1.522-001	7.428-002	5.448-002	4.742-002	1.118-001	1.102-001	6.572-003	1.347-001	8.045-002	1.958-001	3.120-002
1.70	1.469-001	1.478-001	7.211-002	5.050-002	4.444-002	1.218-001	9.932-002	1.1315-002	1.224-001	1.042-001	2.019-001	8.902-003
1.80	1.590-001	1.402-001	6.847-002	4.747-002	4.224-002	1.346-001	8.635-002	1.501-002	1.034-001	1.247-001	2.022-001	1.501-002
1.90	1.678-001	1.298-001	6.262-002	4.613-002	4.251-002	1.497-001	7.325-002	1.136-002	7.886-002	1.1395-001	1.960-001	3.850-002</

Table A36b
Pressure Coefficients
 $T = 2/9 \quad H = 4/9$

k_d	ρ_1^0	ρ_2^0	ρ_3^0	ρ_1^{90}	ρ_2^{90}	ρ_3^{90}
0.01	9.861-011	-1.975-003	1.109-010	-2.222-003	1.233-010	-2.469-003
0.05	6.147-008	-9.874-003	6.916-008	-1.110-002	7.680-008	-1.233-002
0.10	9.758-007	-1.973-002	1.096-006	-2.216-002	6.082-008	-9.875-003
0.15	4.874-006	-2.957-002	5.468-006	-3.313-002	9.719-007	-1.974-002
0.20	1.512-005	-3.936-002	1.692-005	-4.396-002	4.902-006	-2.959-002
0.30	7.250-005	-5.878-002	8.060-005	-6.505-002	1.872-005	-4.850-002
0.40	2.119-004	-7.794-002	2.333-004	-8.512-002	8.876-005	-7.114-002
0.50	4.663-004	-9.680-002	5.078-004	-1.039-001	2.554-004	-9.191-002
0.60	8.447-004	-1.154-001	9.075-004	-1.213-001	5.670-004	-1.103-001
0.70	1.315-003	-1.337-001	1.391-003	-1.369-001	1.143-003	-1.161-001
0.80	1.784-003	-1.519-001	1.859-003	-1.509-001	2.051-003	-1.346-001
0.90	2.084-003	-1.701-001	2.146-003	-1.629-001	3.382-003	-1.529-001
1.00	1.949-003	-1.882-001	2.020-003	-1.728-001	5.224-003	-1.710-001
1.10	1.010-003	-2.064-001	1.194-003	-1.805-001	7.663-003	-1.890-001
1.20	-1.225-003	-2.246-001	-6.534-004	-1.857-001	1.078-002	-2.070-001
1.30	-5.354-003	-2.426-001	-3.838-003	-1.880-001	1.462-002	-2.251-001
1.40	-1.205-002	-2.599-001	-8.595-003	-1.869-001	1.920-002	-2.436-001
1.50	-2.196-002	-2.757-001	-1.498-002	-1.816-001	2.449-002	-2.626-001
1.60	-3.552-002	-2.889-001	-2.273-002	-1.715-001	3.031-002	-2.826-001
1.70	-5.274-002	-2.979-001	-3.117-002	-1.558-001	3.638-002	-3.036-001
1.80	-7.285-002	-3.010-001	-3.914-002	-1.343-001	4.224-002	-3.260-001
1.90	-9.425-002	-2.968-001	-4.522-002	-1.071-001	4.729-002	-3.497-001
2.00	-1.147-001	-2.849-001	-4.805-002	-7.555-002	5.092-002	-3.743-001
2.10	-1.317-001	-2.659-001	-4.689-002	-4.131-002	5.268-002	-3.992-001
2.20	-1.436-001	-2.415-001	-4.184-002	-6.438-003	5.243-002	-4.236-001
2.30	-1.497-001	-2.139-001	-3.382-002	-2.731-002	5.043-002	-4.467-001
2.40	-1.502-001	-1.853-001	-2.420-002	5.881-002	4.729-002	-3.497-001
2.50	-1.462-001	-1.571-001	-1.441-002	8.760-002	4.349-002	-4.873-001
2.60	-1.390-001	-1.302-001	-5.614-003	1.137-001	3.977-002	-5.045-001
2.70	-1.299-001	-1.050-001	1.364-003	1.374-001	3.650-002	-5.199-001
2.80	-1.198-001	-8.134-002	6.031-003	1.591-001	3.397-002	-5.335-001
2.90	-1.096-001	-5.893-002	8.158-003	1.792-001	3.231-002	-5.458-001
3.00	-9.988-002	-3.736-002	7.706-003	1.979-001	3.163-002	-5.568-001
3.10	-9.096-002	-1.622-002	4.765-003	2.154-001	3.197-002	-5.665-001
3.20	-8.314-002	4.943-003	-4.896-004	2.320-001	3.238-002	-5.751-001
3.30	-7.658-002	2.657-002	-7.814-003	2.478-001	3.596-002	-5.825-001
3.40	-7.135-002	4.913-002	-1.691-002	2.627-001	3.983-002	-5.886-001
3.50	-6.746-002	7.310-002	-2.743-002	2.770-001	4.349-002	-5.933-001
3.60	-6.483-002	9.904-002	-3.896-002	2.908-001	4.737-002	-5.974-001
3.70	-6.326-002	1.276-001	-5.099-002	3.040-001	5.132-002	-6.000-001
3.80	-6.241-002	1.595-001	-6.291-002	3.170-001	5.543-002	-6.018-001
3.90	-6.163-002	1.958-001	-7.394-002	3.297-001	5.955-002	-6.028-001
4.00	-5.990-002	2.375-001	-8.304-002	3.424-001	6.368-002	-6.028-001
4.50	7.262-002	5.515-001	-3.658-002	3.835-001	7.147-002	-3.567-001
5.00	5.916-001	4.427-001	8.952-002	8.132-002	8.162-002	-3.439-001
					9.015-002	-5.959-001
					1.111-001	-5.921-001
					1.386-001	-5.870-001
					2.319-001	-7.575-002
					4.569-001	-6.391-001
					5.431-001	-1.320-000
					5.915-001	-2.357-001
					1.545-001	-2.543-001
					1.758-001	-2.318-001
					2.005-001	-2.088-001
					3.849-001	-1.480-001
					3.045-001	-2.357-001
					2.052-001	-8.525-001
					2.163-001	-8.862-001
					2.251-001	-9.222-001
					1.849-001	-1.114-000
					1.081-001	-1.057-000
					1.928-001	-8.208-001
					1.790-001	-7.911-001
					1.063-001	-6.664-001
					9.225-002	-6.455-001
					7.872-002	-6.258-001
					6.591-002	-6.073-001
					5.404-002	-5.899-001
					4.338-002	-5.735-001
					3.422-002	-5.580-001
					2.689-002	-5.431-001
					2.014-002	-4.362-001
					1.897-002	-4.583-001
					1.781-002	-4.784-001
					1.743-002	-4.966-001
					1.853-002	-5.130-001
					2.073-002	-4.126-001
					1.494-002	-3.132-001
					1.732-002	-3.380-001
					1.924-002	-3.630-001
					2.043-002	-3.880-001
					3.027-002	-3.300-001
					1.686-002	-2.607-001
					2.056-002	-2.783-001
					2.423-002	-2.958-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
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					3.027-002	-3.300-001
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					2.056-002	-2.958-001
					2.423-002	-3.131-001
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					3.027-002	-3.300-001
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					2.423-002	-3.131-001
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					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
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					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
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					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001
					2.758-002	-3.131-001
					3.027-002	-3.300-001
					1.586-002	-2.783-001
					2.056-002	-2.958-001
					2.423-002	-3.131-001

Appendix B

NRL SHIP PROGRAM

The version of the SHIP program used to generate the data in the tables differs from the version of the SHIP program listed in NRL Report 7240* in three significant ways. The first difference is the inclusion of Subroutines CFINT, EXI, and EXI2. These subroutines calculate asymptotic expressions for the parts of the integrals truncated in Subroutines CSTM, CTSM, and CSSM, thus giving improved accuracy. However, this is a time-consuming process. To offset this increase in computer execution time, most of the trigonometric functions needed repeatedly in the program are calculated and prestored in Subroutine CALTRIG. With this addition, the program runs in about the same time as before Subroutines CFINT, EXI, and EXI2 were added, but more memory space is required. The third major change in the program is the addition of Subroutine SOLZIJ. This subroutine calculates impedance coefficients Z_i and Z'_i for ring transducers (see Eq. (8)).

A convenient feature added to the program is the inclusion of entry point FIELD in Subroutine SOLRING. For a given frequency and ring geometry it is not necessary to execute the entire program for each velocity distribution. A single call to SOLRING (or SOLZIJ) prestores on input/output unit 10 everything that is needed for any velocity distribution for a given frequency and ring geometry. For alternate velocity distributions, call FIELD to avoid recalculating these quantities.

Numerous minor changes were made in almost all subroutines; hence, the entire program is listed in this appendix. Included also is a sample output generated by the listed program corresponding to the example listed in the text. This illustrates the use of SOLZIJ and FIELD.

*P. H. Rogers, "SHIP (Simplified-Helmholtz-Integral Program), A Fast Computer Program for Calculating the Acoustic Radiation and Radiation Impedance for Free-Flooded-Ring and Finite-Circular-Cylinder Sources," NRL Report 7240, June 19, 1972.

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PROGRAM SHIP

```

BANK(0),/6/,/STORSCST/
COMMON/TOY/NQD1,ISYM,ICOR/PIT/JMAX,JMAXH,IMAX/BLK1/H,A,FK,PI
COMMON/VELO/VEL/DIST/DIST/RAD/RIN,ROUT
COMMON/MXD/JMXT,MXD/RRCC/RHOC,NPTS
DIMENSION VEL(60),JMXT(60)
TYPE COMPLEX VEL
C   ROUT IS THE OUTER RADIUS OF THE RING RIN THE INNER RADIUS
C   FK IS THE WAVE NUMBER
C   IMAX IS THE NUMBER OF BANDS ON THE TOP AND BOTTOM OF THE RING
C   JMAXH IS HALF THE NUMBER OF BANDS ON THE INSIDE AND OUTSIDE SURFACES
C   JMAXH AND IMAX MUST BOTH BE LESS THAN OR EQUAL TO TEN
C   NQD1 SPECIFIES GAUSSIAN QUADRATURE ORDER - NQD1 MAY BE 10, 20 OR 32
C   NQD1 = 32 UNLESS CHANGED IN SHIP
C   FOR CYLINDER SET RIN = 0. AND ROUT EQUAL TO THE RADIUS
C   H IS THE HALF HEIGHT OF THE RING
C   RHOC IS THE PRODUCT OF THE DENSITY AND THE SOUND VELOCITY OF THE MEDIUM
C   VEL(I) SPECIFIES THE (COMPLEX) VELOCITY ON THE ITH BAND
C   ISYM=+1 = SYMMETRY ABOUT Z=0, -1 = ANTISYMMETRY AND ISYM=0 = NO SYMMETRY
C   FOR Z(I,J) CALL SOLZIJ
C   FOR A FIXED FREQUENCY AND GEOMETRY CALL SOLRING FOR THE FIRST
C   VELOCITY DISTRIBUTION THEN CALL FIELD FOR ANY SUBSEQUENT VELOCITY
C   DISTRIBUTIONS. THIS SAVES CONSIDERABLY IN TIME.
C   IF BOTH IMPEDANCE COEFFICIENTS AND RADIATION IMPEDANCE ARE DESIRED CALL
C   SOLZIJ FIRST THEN CALL FIELD REPEATEDLY
CALL TIME
RHOC = 1.5E6
ISYM = 1
JMAXH = 10 $ IMAX = 10
FK = 10.0
RIN = 0.09
ROUT = 0.11
H = 0.1
CALL SOLZIJ
CALL TIME
VIN = -1.03
VTOP = -0.3
VOUT = 0.97
DO 100 I = 1, 10
VEL(I) = VIN
VEL(I+10) = VTOP
100 VEL(I+20) = VOUT
CALL FIELD
CALL TIME
C   NPTS IS THE NUMBER OF FARFIELD POINTS CALCULATED BETWEEN 0 AND 90 DEGREES
C   DIST IS THE FARFIELD DISTANCE (ICOR=1) IF ICOR=0 FIELD CALC. AT INFINITY
ICOR = 0
NPTS = 18
CALL FARFLD
CALL TIME
END

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```

SUBROUTINE SOLZIJ
COMMON/TOY/NQD1,ISYM,ICOR/RAD/RIN,ROUT/LC/LCMAX,LCMAXH/NOPR/NOPR
COMMON/BLK1/H,A,FK,PI/PQR/PQR/VELO/VEL/AREA/AREA
COMMON/PII/JMAX,JMAXH,IMAX
DIMENSION VEL(60), AREA(60), ZIJ(3,3), PQR(30), Z(3), VTEMP(60)
TYPE COMPLEX VEL, ZIJ, PQR, Z, VTEMP
IF(RIN.EQ.0.0) GO TO 200
ISYMTMP = ISYM
JMAX = JMAXH + JMAXH
LCMAXH = JMAX + IMAX
LCMAX = LCMAXH + LCMAXH
DO 299 I = 1, LCMAX
299 VTEMP(I) = VEL(I)
NOPR = 1
ISYM = 1
AREAT = (RIN + ROUT) * (H + H + ROUT - RIN)
PRINT 700
700 FORMAT(1H1)
PRINT 701,RIN,ROUT,H,FK,NQD1,IMAX,JMAX
701 FORMAT(* RIN=*F7.3* ROUT=*F7.3* H=*F7.3* FK=*F7.3* NQD1=*I3
$* IMAX=*I3* JMAX=*I3//)
DO 300 I = 1, 3
DO 300 J = 1, 3
300 ZIJ(I,J) = 0.0
N1 = JMAXH + 1
N2 = JMAXH + IMAX
N3 = N2 + 1
DO 305 I = 1, JMAXH
305 VEL(I) = 1.0
DO 310 I = N1, N2
310 VEL(I) = 0.0
DO 306 I = N3, LCMAXH
306 VEL(I) = 0.0
DO 311 N = 1, 3
IF(N.EQ.1) CALL SOLRING
IF(N.EQ.2) 400, 401
400 CONTINUE
DO 350 I = 1, JMAXH
350 VEL(I) = 0.0
DO 351 I = N1, N2
351 VEL(I) = 1.0
CALL FIELD
401 IF(N.EQ.3) 402, 403
402 CONTINUE
DO 352 I = N1, N2
352 VEL(I) = 0.0
DO 353 I = N3, LCMAXH
353 VEL(I) = 1.0
CALL FIELD
403 CONTINUE
DO 315 I = 1, JMAXH
315 ZIJ(1,N) = ZIJ(1,N) + PQR(I) * AREA(I)
DO 320 I = N1, N2
320 ZIJ(2,N) = ZIJ(2,N) + PQR(I) * AREA(I)
DO 325 I = N3, LCMAXH

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325 ZIJ(3,N) = ZIJ(3,N) + PQR(I) * AREA(I)
311 CONTINUE
    DO 330 I = 1, 3
    DO 330 J = 1, 3
330 ZIJ(I,J) = ZIJ(I,J) * 2.0 * CMPLX(0.0, -FK) / AREAT
    Z(1) = ZIJ(2,3) + ZIJ(3,2)
    Z(2) = ZIJ(3,1) + ZIJ(1,3)
    Z(3) = ZIJ(1,2) + ZIJ(2,1)
    PRINT 99
99  FORMAT(1X,*THE IMPEDANCE COEFFICIENTS FOR THIS RING TRANSDUCER IN
    $UNITS OF RHO C A ARE*,/)
    PRINT 100, ZIJ(1,1), ZIJ(2,2), ZIJ(3,3), Z(1), Z(2), Z(3)
100 FORMAT(2X,5HZ1 = ,C(E14.5,E14.5),/,2X,5HZ2 = ,C(E14.5,E14.5),/,
    $      2X,5HZ3 = ,C(E14.5,E14.5),/,1X,6HZ1P = ,C(E14.5,E14.5),/,
    $      1X,6HZ2P = ,C(E14.5,E14.5),/,1X,6HZ3P = ,C(E14.5,E14.5),/)
    NOPR = 0
    ISYM = ISYMP
    DO 298 I = 1, LCMA
298 VEL(I) = VTEMP(I)
    GO TO 210
200 PRINT 700
    PRINT 101
101 FORMAT(1X,*THIS PROGRAM DOES NOT COMPUTE IMPEDANCE COEFFICIENTS FO
    $R CYLINDER TRANSDUCERS*)
210 CONTINUE
    RETURN
    END

```

ROGERS AND ZALESK

SUBROUTINE SOLRING

```

TYPE COMPLEX V,SUMJ,RHOC,ANS,VEL,DM,GM,VEL1,ANS1,ANS2,PQR
DIMENSION REST(6000),ANS(60),V(30),VEL(60),GM(30,60),DM(60,60)
1,VEL1(30),PZ(20),PLZ(20),PR(20),PLR(20),ANS1(30),ANS2(30),AREA(60)
DIMENSION JMXT(60),PQR(30)
COMMON/LC/LCMAX,LCMAXH/BLKA/PR,PLR,PZ,PLZ/RCC/JTOP
COMMON/TOY/NQD1,ISYM,NQD3/PIT/JMAX,JMAXH,IMAX
COMMON/BLK1/H,A,FK,PI/DEL/DELR,DELZ/RRCC/RRCC,NPTS
COMMON/RAD/RIN,ROUT/MXD/JMXT,MXD/5/DM/ANS/ANS/VELO/VEL
COMMON/6/GM,REST/TIDY/FAST/EPS/EPS/EPS1/EPS1/JOE/JTOP1
COMMON/AREA/AREA/NOPR/NOPR/PQR/PQR
DATA(NQD1 = 32),(PI = 3.14159265359),(EPS = 0.001),(EPS1 = 0.0001)
DATA(JTOP1 = 10),(JTOP = 10)
JMAX = 2*JMAXH
FAST = PI * NQD1 / (8.0 * FK * (ROUT + PI * H))
IF(RIN.EQ.0.0) GO TO 200
LCMAXH = JMAX + IMAX
A = (RIN + ROUT) * 0.5
GO TO 201
200 LCMAXH = JMAXH + IMAX
A = ROUT
201 LCMAX = LCMAXH + LCMAXH
CALL GQC
CALL ERING
RHOC = -FK * CMPLX(0.0, RRCC)
DO 14 J=1,LCMAXH
11 ANS1(J)= ANS2(J) = (0.0,0.0)
DO 14 I=1,LCMAXH
DM(I,J) = DM(I,J) + DM(I, LCMAX + 1 - J)
GM(I,J) = GM(I,J) + GM(I, LCMAX + 1 - J)
14 CONTINUE
REWIND 10
WRITE(10) DM, GM
ENTRY FIELD
REWIND 10
READ(10) DM, GM
IF(ISYM.EQ.0) GO TO 202
DO 203 II = 1, LCMAXH
203 VEL(LCMAX + 1 - II) = ISYM * VEL(II)
202 CONTINUE
IF(NOPR.EQ.1) GO TO 1111
88 IF(RIN.NE.0.) PRINT 744
IF(RIN.EQ.0.) PRINT 746
746 FORMAT(1H1 60X19HCYLINDER TRANSDUCER//)
744 FORMAT(1H1 60X15HRING TRANSDUCER//)
PRINT 701,RIN,ROUT,H,FK,NQD1,IMAX,JMAX
701 FORMAT(* RIN=*F7.3* ROUT=*F7.3* H=*F7.3* FK=*F7.3* NQD1=*I3
$* IMAX=*I3* JMAX=*I3/)
PRINT 365
365 FORMAT (9X3HNUM8X7HSP REAL11X12HSP IMAGINARY9X8HVEL REAL10X13HVE
$1 IMAGINARY/)
1111 CONTINUE
IF(ISYM.EQ.-1) GO TO 99
DO 7 J=1,LCMAXH
VEL1(J) = .5*(VEL(J) + VEL(LCMAX + 1 - J) )

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7 CONTINUE
  IF(MXD.NE.1) GO TO 806
  DO 805 J=1,LCMAXH
    IF(JMXT(J).NE.0 ) GO TO 805
    DO 807 I=1,LCMAXH
      DM(I,J) = - GM(I,J)
807 GM(I,J) = (0.0,0.0)
805 CONTINUE
806 CONTINUE
  DO 246 I=1,LCMAXH
    V(I) = (0.0,0.0)
    DO 246 J=1,LCMAXH
      V(I) = V(I) + GM(I,J)*VEL1(J)
246 CONTINUE
  CALL SIMX(DM,LCMAXH,V,ANS1)
  IF(ISYM.EQ.1) GO TO 98
99 CONTINUE
  DO 15 I=1,LCMAXH
    DO 15 J=1,LCMAXH
      DM(I,J) = DM(I,J) - DM(I,LCMAX + 1 - J) - DM(I,LCMAX + 1 - J)
15 GM(I,J) = GM(I,J) - GM(I,LCMAX + 1 - J) - GM(I,LCMAX + 1 - J)
    DO 8 J=1,LCMAXH
      VEL1(J) = .5*(VEL(J) - VEL(LCMAX + 1 - J) )
8 CONTINUE
  DO 248 I=1,LCMAXH
    V(I) = (0.0,0.0)
    DO 248 J=1,LCMAXH
      V(I) = V(I) + GM(I,J)*VEL1(J)
248 CONTINUE
  CALL SIMX(DM,LCMAXH,V,ANS2)
98 DO 10 J=1,LCMAXH
  ANS(J) = ANS1(J) + ANS2(J)
10 ANS(LCMAX + 1 - J) = ANS1(J) - ANS2(J)
  IF(MXD.NE.1) GO TO 809
  DO 808 J=1,LCMAXH
    IF(JMXT(J).NE.0 ) GO TO 808
    VEL(J) = VEL(LCMAX+1-J) = ANS(J)
    ANS(J) = ANS(LCMAX+1-J) = (0.0,0.0)
808 CONTINUE
809 CONTINUE
  SUMJ = (0.0,0.0)
  DO 537 J=1,JMAXH
    IF(RIN.EQ.0.) GO TO 600
    AREA(J) = DELZ*RIN
    AREA(JMAXH+IMAX+J) = DELZ*ROUT
    GO TO 537
600 AREA(IMAX+J) = ROUT*DELZ
537 CONTINUE
  JRING = JMAXH
  IF(RIN.EQ.0.) JRING=0
  DO 538 J=1,IMAX
    AREA(JRING+J) = PR(J)*DELR
538 CONTINUE
  DO 539 J=1,LCMAXH
539 AREA(LCMAX + 1 - J) = AREA(J)
  DO 7778 I = 1, LCMAXH

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7778 PQR(I) = ANS(I)
      DO 401 J=1,LCMAX
        SUMJ= SUMJ + CONJG(VEL(J))*ANS(J)*AREA(J)
        ANS(J) = RHOC*ANS(J)
        IF(NOPR.EQ.1) GO TO 1112
        PRINT 400, J,ANS(J),VEL(J)
400  FORMAT(1X,110,2C(E20.8,E20.8))
1112 CONTINUE
401 CONTINUE
      A1 = RIN*ROUT
      AREAT =A1*( H + H + ROUT - RIN)
      SUMJ = -FK*(0.0,1.0)*SUMJ/AREAT
      IF(NOPR.EQ.1) GO TO 1113
      PRINT 506, SUMJ
506  FORMAT(/* THE COMPLEX RADIATION IMPEDANCE IN UNITS OF RHU C A IS (
      $*C(E15.8,E16.8)*)* )
1113 CONTINUE
402 CONTINUE
      END

```

```

TYPE COMPLEX GM,ISM,SIM,ITM,TIM,IIM,SSM,TSM,SRM,TRM,DM,RHOC,
SANS,V1,V,VS,V1,TSV,SIV,ITV,TIV,TV,SSV,TSV,STV,SRV,TRV,SUMJ,TTV
DIMENSION GM(30,60),DM(60,60),SSM(10,20),SSV(10,20),REST(6000),
ITSM(10,20),TRM(10,10),STM(20,10),TTV(10,10),TSV(10,20),TBV(10,10),
2 STV(20,10),ISM(10,20),ITM(20,10),SIM(10,20),TIM(10,20),IIM(10,20)
3 ,TSV(10,20),SIV(10,20),ITV(20,10),TIV(10,20)
4 ,TIV(10,20),PLZ(20),PR(20),PLR(20),PZ(20)
COMMON/DEL/DFLR,DELZ/RLKA/PR,PLR,PZ,PLZ/LC/LCMAX,LCMAXH
COMMON/SSV/SSV/TSV/TSV/STV/STV/SRV/SRV/TBV/TV/TTV/TTV
COMMON/TSV/TSV/SIV/SIV/ITV/ITV/TTV/TTV/IIV/IIV
COMMON/TIM/TIM/SIM/SIM/ISM/ISM/ITM/ITM/IIM/IIM
COMMON/RLKD/TSM/UJ/TBM/PJ/STM/BLKB/SSM/VEL/VS,VI/VELT/VY
COMMON/PIT/JMAX,JMAXH,IMAX/RAD/RIN,ROUT/5/DM/6/GM,REST
COMMON/TIDY/FAST/RCC/JTOP/RLK1/H,A,FK,PI
FKA = FK*A $ DELZ = H/JMAXH $ DELR = (ROUT-RIN)/IMAX
DO 1 J=1,JMAXH
KC = JMAX + 1 - J
PZ(J) = H + .5*DELZ - J*DELZ
PZ(KC) = -PZ(J)
PLZ(J) = PZ(J) - .5*DELZ
PLZ(KC) = PZ(KC) - .5*DELZ
DO 2 I=1,IMAX
PR(I) = RIN - .5*DELR + I*DELR
CALL CALRES
CALL CALTRIG
CALL CTM
CALL STTRIG
CALL CSTM
CALL SSTRIG
CALL CSSM
CALL TSTRIG
CALL CTSM
DO 6000 I=1,LCMAXH
DO 6000 J=1,LCMAXH
GM(I,J) = (0.0,0.0)
0 DM(I,J) = (0.0,0.0)
IF(RIN.F0.0.) GO TO 80
DO 64 I=1,IMAX
DO 64 J= 1,IMAX
GM(I,JMAXH+I,JMAXH+J) = TTV(I,J)
4 CONTINUE
DO 31, I=1,JMAXH
KITE = JMAXH + 1 - I
DO 32 J=1,JMAXH
DM(I,J) = IIM(KITE,JMAXH+1-J)
GM(I,J) = IIV(KITE,JMAXH+1-J)
GM(I,LCMAX+1-J) = IIV(KITE,JMAXH+J)
32 DM(I,LCMAX+1-J) = IIM(KITE,JMAXH+J)
DO 33 I=1,IMAX
GM(I,JMAXH+J) = ITV(KITE,J)
33 DM(I,JMAXH+J) = ITM(KITE,J)
DO 34 J=1,IMAX
GM(I,JMAXH+IMAX+J) = ISV(KITE,J)
34 DM(I,JMAXH+IMAX+J) = ISM(KITE,J)

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DO 35 J=1,IMAX
  GM(I,JMAXH+LCMAXH+J)= ITV(JMAX +1-KITE,IMAX+1-J)
35 DM(I,JMAXH+LCMAXH+J)= ITM(JMAX +1-KITE,IMAX+1-J)
31 CONTINUE
DO 36 I=1,IMAX
  KOOT = JMAXH+I
  DM(KOOT,KOOT) = (0.5,0.0)
DO 37 J=1,JMAXH
  KITE = JMAXH + 1 - J
  GM(KOOT,J)= TIV(I,KITE)
  DM(KOOT,J)= TIM(I,KITE)
  GM(KOOT,LCMAX +1-J)= TIV(I,JMAXH+J)
37 DM(KOOT,LCMAX +1-J)= TIM(I,JMAXH+J)
DO 38 J=1,JMAX
  GM(KOOT,JMAXH+IMAX+J)= TSV(I,J)
38 DM(KOOT,JMAXH+IMAX+J)= TSM(I,J)
DO 39 J=1,IMAX
  GM(KOOT,LCMAXH+JMAXH+J)= THV(I,IMAX+1-J)
39 DM(KOOT,LCMAXH+JMAXH+J)= THM(I,IMAX+1-J)
36 CONTINUE
DO 40 I=1,JMAXH
  KOOT = JMAXH + IMAX + I
DO 41 J=1,JMAXH
  KITE = JMAXH+1-J
  GM(KOOT,J) = SIV(I,KITE)
  DM(KOOT,J) = SIM(I,KITE)
  GM(KOOT,LCMAX+1-J)= SIM(I,JMAXH+J)
  GM(KOOT,LCMAX+1-J)= SIV(I,JMAXH+J)
41 CONTINUE
DO 42 J=1,IMAX
  DM(KOOT,JMAXH+LCMAXH+J)=STM(JMAX+1-I,IMAX+1-J)
  GM(KOOT,JMAXH+LCMAXH+J)=STV(JMAX+1-I,IMAX+1-J)
  GM(KOOT,JMAXH+J)= STV(I,J)
42 DM(KOOT,JMAXH+J)= STM(I,J)
DO 43 J=1,JMAX
  GM(KOOT,JMAXH+IMAX+J) = SSV(I,J)
43 DM(KOOT,JMAXH+IMAX+J) = SSM(I,J)
40 CONTINUE
  RETURN
80 DO 84 I=1,IMAX
DO 84 J= 1,IMAX
84 GM(I,J) = TTV(I,J)
DO 71 I=1,IMAX
  DM(I,I)= (0.5,0.0)
DO 72 J=1,JMAX
  GM(I,IMAX+J) = TSV(I,J)
72 DM(I,IMAX+J) = TSM(I,J)
DO 71 J=1,IMAX
  GM(I,IMAX + IMAX + J) = THV(I,IMAX + 1 - J)
71 DM(I,JMAX + IMAX + J) = THM(I,IMAX + 1 - J)
DO 73 I=1,JMAXH
  K= IMAX + I
DO 74 J=1,IMAX
  GM(K,J) = STV(I,J)
74 DM(K,J) = STM(I,J)
DO 75 J=1,JMAX

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GM(K,IMAX + J) = SSV(I,J)
75 DM(K,IMAX + J) = SSM(I,J)
DO 73 J=1,IMAX
GM(K,JMAX+IMAX+J)= + STV(JMAX +1-I,IMAX + 1 -J)
73 DM(K,JMAX+IMAX+J)= + STM(JMAX +1-I,IMAX + 1 -J)
END
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ROGERS AND ZALESAK

SUBROUTINE CTBM

```

COMMON/FPS1/EP5
COMMON/5/BT0(10,10,32),BT1(11,10,32),QZ(32,10),SIGMA(32),REST(128)
COMMON/6/GT0(10,10,32),GT1(11,10,32),RUST1(2880)
COMMON/RLK1/H,A,FK,PI/PIT/JMAX,JMAXH,IMAX/TTV/TTV/TJDY/FAST
COMMON/BLK2/XI,WF/TOY/NQD1,N2,N3/BLK3B/B10,B11/BLK3/RS0,BS1
COMMON/BLKA/PR,PLR,PZ,PLZ/DEL/DFLR,DELZ/BOLD/GS0,GS1/RCC/JTOP
COMMON/FS/FKFK,FKFAST,TFK/TBV/TBV/UJ/TRM/GGMS/GGMS
DIMENSION PZ(20),PLZ(20),PR(20),PLR(20),TTV(10,10),TRM(10,10),
1 TRV(10,10),GGMS(10,32)
TYPE COMPLEX TTV,TRM,TRV
DIMENSION XI(32),WF(32),SUMT(10),GS0(10,32),GS1(10,32),UMT(10),
1 RUMT(10),RS0(10,32),RS1(10,32),RI0(10,32),RI1(10,32)
COMMON/STORSCTB/TRBSIN,TRCOS,TRBEXP
DIMENSION TRBSIN(32),TRCOS(32),TRBEXP(32,10)
EQUIVALENCE (TRCOS(1),TRBEXP(1))
TPK = 0.25 * FKFAST
PIOTWO = 0.5 * PI % TWOPI = PI * 2
N=NQD1
HD = .5*DELR
ARGP = H * H
DO 7 JR=1,IMAX
R2 = PR(JR)
RL = R2 - HD
RU = R2 + HD
DO 7 IR=1,IMAX
R1 = PR(IR)
UMI=SUMR=SUMI=SUMRB=SUMIB=0.
DO 1 L=1,N
YAK = BT0(IR,1,L) * BT1(JR,1,L)
VI = YAK * TRCOS(L)
VR = YAK * TRBSIN(L)
SUMIB = SUMIB - VI
SUMRB = SUMRB + VR
SUMR = SUMR - VI * SIGMA(L)
SUMI = SUMI + VR * SIGMA(L)
1 UMI = UMI + YAK
UMI = UMI*TFK
R = R1
IF(R2.LE.R1) R = R2
IF(R.EQ.0.) R = DELR
FACT = 2./(R*PI*ARGP)
RM = R1
IF(R.EQ.R1) RM = R2
FACT1 = PIOTWO / ABS(ABS(R2-R1) - HD)
EFACT1 = 1.0 - FXPF(-FACT1 * ARGP)
UMT(1) = 0. % SUMT(1) = -SUMR % RUMT(1) = - SUMRB
FL = 0.0
ICE = 1
2 ICE = ICE + 1
UMMIT = SUMMIT = SUMMITB = 0.
DO 375 M=1,N
YAKR = BT0(IR,ICE,M) * BT1(JR,ICE,M)
VAKR = YAKR - GT0(IR,ICE,M) * GT1(JR,ICE,M)
UMMIT = UMMIT + VAKR

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ARTISTR = YAKR * TBEXP(M,ICE)
ARTIST = ARTISTR * QZ(M,ICE)
SUMMIT = SUMMIT + ARTIST
375 SUMMITR = SUMMITR + ARTISTR
SUMT(ICE) = SUMT(ICE-1) + SUMMIT
RUMT(ICF) = RUMT(ICE-1) + SUMMITR
UMT(ICE) = UMT(ICE-1) + TPK * UMMIT
FL = FL + FKFAST
ERFC = ABS(FACT * RM * EXPF(-ARGP * FL) * EFAC1 / (FL * SUMT(ICE)))
TESTFR = ABS(1.0 - SUMT(ICE) / SUMT(ICE-1))
IF (TESTFR.LT.EPS.AND.ERFC.LT.EPS) GO TO 3
IF (ICE.GE.JTOP) GO TO 3
GO TO 2
3 CONTINUE
ANSR = SUMT(ICE)          $ ANSI = -SUMI
VNSI = -SUMTR $ VNSR = - RUMT(ICE)
TBM(IR,JR) = CMPLX(ANSR,ANSI) $ TRV(IR,JR) = CMPLX(VNSR,VNSI)
DK = 4.*R1*RU / ((R1 + RU) * (R1 + RU))
CU = (R1+RU)*ELLIPF(DK) + (RU-R1)*ELLIPK(DK)
DK = 4.*R1*RL / ((R1 + RL) * (R1 + RL))
CL = (R1+RL)*ELLIPF(DK) + (RL-R1)*ELLIPK(DK)
CF = (CU - CL) / TWOPI
ANSR = - UMT(ICE) - CF
7 TTV(IR,JR) = CMPLX(ANSR,UMI)
END

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SUBROUTINE CSTM

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COMMON/ICE/ICE,NOFX1
TYPE COMPLEX STV,ITV,STM,ITM
COMMON/EPS/EPS/JOE/JTOP
COMMON/STV/STV/ITV/ITV/PJ/STM/ITM/ITM
COMMON/RAD/RIN,ROUT
DIMENSION ITM(20,10),ITV(20,10),STM(20,10),STV(20,10)
COMMON/RLKA/PR,PLR,PZ,PLZ/PIT/JMAX,JMAXH,IMAX
DIMENSION PZ(20),PLZ(20),PR(20),PLR(20),GGMS(10,32)
DIMENSION RS0(10,32),RS1(10,32),RI0(10,32),RI1(10,32)
DIMENSION XI(32),WF(32),SUMV(10)
DIMENSION GS0(10,32),GS1(10,32),BUMT(10),SUMT(10),BUMV(10)
TYPE COMPLEX ANS,ANSR,VNS,VNSR
COMMON/FS/FKFK,FKFAST,TFK/GGMS/GGMS
COMMON/DEL/DELR,DELZ/ROLD/GS0,GS1/BLK1/H,A,FK,PI/BLK2/XI,WF
COMMON/5/BT0(10,10,32),BT1(11,10,32),OZ(32,10),SIGMA(32),REST(128)
COMMON/TOY/N,NN,NNN/BLK3B/RI0,RI1/BLK3/RS0,RS1/TIDY,FAST
COMMON/6/GT0(10,10,32),STEXP(32,20,10)
COMMON/STORSCST/ST SIN(32,21),STCOS(32,21)
PIOTWO = 0.5 * PI
R1 = A
HD = .5*DELR
DO 1000 JR=1,IMAX
R2 = PR(JR)
RL = R2 - HD
RU = R2 + HD
DO 1000 IR=1,JMAX
ARGP = H - PZ(IR)
SUMR=SUMI=SUMRR=SUMIB = VUMR=VUMI=VUMRB=VUMIR= 0.
DO 1 L =1,N
BU = BT1(JR,1,L)
VAK = RS0(1,L) * BU
VAKR = RI0(1,L) * BU
YAK = VAK * SIGMA(L)
YAKR = VAKR * SIGMA(L)
SUMR = SUMR - YAK * STCOS(L,IR)
SUMI = SUMI + YAK * STSIN(L,IR)
VUMR = VUMR - VAK * STSIN(L,IR)
VUMI = VUMI + VAK * STCOS(L,IR)
SUMRR = SUMRR - YAKR * STCOS(L,IR)
SUMIR = SUMIR + YAKR * STSIN(L,IR)
VUMRB = VUMRB - VAKR * STSIN(L,IR)
VUMIR = VUMIR + VAKR * STCOS(L,IR)
1 CONTINUE
R = R1
IF(PZ,LF,R1) R = R2
IF(R.EQ.0.) R = DELP
FACT = 2./(R*PI*ARGP)
RM = R1
IF(R.EQ.R1) RM = R2
FACT1 = PIOTWO / AMIN1(ROUT - R2, R2 - RIN)
EFACT1 = 1.0 - EXP(-ARGP * FACT1)
SUMT(1) = - SUMR
RUMT(1) = - SUMRR
SUMV(1) = VUMR $ BUMV(1) = VUMRB

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FL = 0.0
ICE = 1
2 ICE = ICE + 1
VUMMIT = VUMMITR = 0.
SUMMIT = SUMMITR = 0.
DO 375 M=1,N
RU = STFXP(M,IR,ICE) * RT1(JR,ICE,M)
VAKR = RSO(ICE,M) * RU
VAKRB = RIO(ICE,M) * RU
SUMMIT = SUMMIT + VAKR * QZ(M,ICE)
SUMMITR = SUMMITR + VAKRB * QZ(M,ICE)
VUMMIT = VUMMIT + VAKR
VUMMITR = VUMMITR + VAKRB
375 CONTINUE
RUMV(ICE) = RUMV(ICE - 1) + VUMMITR
SUMV(ICE) = SUMV(ICE - 1) + VUMMIT
SUMT(ICE) = SUMT(ICE - 1) + SUMMIT
RUMT(ICE) = RUMT(ICE - 1) + SUMMITR
FL = FL + FKFAST
FLT = FL + FACT1
ERFC = ARS(FACT * RM * EFAC1 * FXPF(-ARGP * FL) / (FL*SUMT(ICE)))
IF (ERFC.LT.FPS) GO TO 3
IF (ICE.GE.JTOP) GO TO 3
GO TO 2
3 CONTINUE
ANSI = -SUMI
ANSR = SUMT(ICE)
ANSIR = - SUMIR % ANSRB = RUMT(ICE)
NOEXT = 0
CALL CFINT(ARGP, RU, ROUT, FL, CFU)
CFST = RU * CFU
NOEXT = 1
CALL CFONE(ARGP, RU, ROUT, FL, CFU)
CFSTV = RU * CFU
NOEXT = 0
CALL CFINT(ARGP, RL, ROUT, FL, CFL)
CFST = CFST - (RL * CFL)
NOEXT = 1
CALL CFONE(ARGP, RL, ROUT, FL, CFL)
CFSTV = CFSTV - (RL * CFL)
NOEXT = 0
CALL CFINT(ARGP, RU, RIN, FL, CFU)
CFIT = RU * CFU
NOEXT = 1
CALL CFONE(ARGP, RU, RIN, FL, CFU)
CFITV = RU * CFU
NOEXT = 0
CALL CFINT(ARGP, RL, RIN, FL, CFL)
CFIT = CFIT - (RL * CFL)
NOEXT = 1
CALL CFONE(ARGP, RL, RIN, FL, CFL)
CFITV = CFITV - (RL * CFL)
ANSR = ANSR+CFST % ANSRB = ANSRB + CFIT
STM(IR,JR) = CMPLX(ANSR,ANSI)
ITM(IR,JR) = CMPLX(ANSRB,ANSIR)
SUMV(ICE) = SUMV(ICE) + CFSTV

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RUMV(ICF) = RUMV(ICF) + CFITV  
VNS = CMPLX(-SUMV(ICF),VUMI) $ VNSB = CMPLX(-RUMV(ICF),VUMIR)  
STV(IR,JR) = VNS $ ITV(IR,JR) = VNSB  
1000 CONTINUE  
END
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SUBROUTINE CSSM

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COMMON/ICF/ICF,NOEX1
DIMENSION SIV(10,20),IIV(10,20),SSV(10,20),ISV(10,20)
DIMENSION SIM(10,20),IIM(10,20),SSM(10,20),ISM(10,20)
TYPE COMPLEX SSV,SIV,ISV,IIV,SSM,SIM,ISM,IIM
DIMENSION P7(20),PL7(20),PR(20),PLR(20)
TYPE REAL IIV,IIRV,ISIV,ISRV,ISR,IIR,IIT,IST,III,IIR,ISI,ISR
DIMENSION SSR(10),IIR(10),SIR(10),ISR(10)
DIMENSION GS0(10,32),GS1(10,32),XI(32),WF(32),SUMT(10)
DIMENSION RS0(10,32),RS1(10,32)
DIMENSION RT0(10,32),RI1(10,32),GI0(10,32),GI1(10,32)
TYPE COMPLEX SS,II,YAKC,UMII,UMSS,UMIS
DIMENSION SST(10),IIT(10),SIT(10),IST(10),GGMS(10,32)
DIMENSION RUMT(10),DUMT(10),EXPF1(32)
COMMON/FPS/FPS
COMMON/RAD/RIN,ROUT/TOY/NQD1,NQD2,NQD3/JOE/JTOP/ROLD/GS0,GS1
COMMON/PIT/JMAX,JMAXH,IMAX/BLKA/PR,PLR,PZ,PLZ
COMMON/SSV/SSV/IIV/IIV/SIV/SIV/ISV/ISV/GGMS/GGMS
COMMON/BLKA/SSM/SIM/SIM/IIM/IIM/ISM/ISM/FS/FKFK,FKFAST,TFK
COMMON/RLK1/H,A,FK,PI/RLK2/XI,WF/BLK3/RS0,RS1/TIDY/FAST
COMMON/RROLD/GI0,GI1/BLK3B/RT0,RI1/DEL/DELR,DELZ
COMMON/5/RT0(10,10,32),RT1(11,10,32),QZ(32,10),SIGMA(32),REST(128)
COMMON/6/GT0(10,10,32),SSEXP(32,20,10)
COMMON/STORSCST/SSSIN(32,21),SSCOS(32,21)
N = NQD1
ARGP = .5*DFLZ
ZER0 = 0.0
TPK = .25*FKFAST
Z0 = H- .5*DELZ
SSI=SSR=III=IIR=SII=SIR=ISI=ISR=0.
UMII = UMIS = UMSS = (0.0,0.0)
DO 1 L=1,N
SIGMAP = ARGP*SIGMA(L)
EXPF1(L) = EXPF(-QZ(L,1)*ARGP)
TRIGFR = 2.*COS(SIGMAP) - 2.
TRIGFI = 2.*SIN(SIGMAP)
YAK = TFK*WF(L)/SIGMA(L)
YAKR = -YAK*TRIGFR
YAKI = YAK*TRIGFI
YAKC = CMPLX(YAKR,-YAKI)
SSI = SSI + B.0(1,L)*RS1(1,L)*YAKI
SSR = SSR + RS0(1,L)*RS1(1,L)*YAKR
IIR = IIR - RI0(1,L)*RI1(1,L)*YAKR
III = III - RI0(1,L)*RI1(1,L)*YAKI
SII = SII - RS0(1,L)*RI1(1,L)*YAKI
SIR = SIR - RS0(1,L)*RI1(1,L)*YAKR
ISI = ISI + RI0(1,L)*RS1(1,L)*YAKI
ISR = ISR + RI0(1,L)*RS1(1,L)*YAKR
UMII = UMII + YAKC*RI0(1,L)*RI0(1,L)
UMIS = UMI + YAKC*RI0(1,L)*RS0(1,L)
UMSS = UMSS + YAKC*RS0(1,L)*RS0(1,L)
1 CONTINUE
SUMT(1) = REAL(UMSS) $ RUMT(1) = REAL(UMII) $ DUMT(1) = REAL(UMIS)
SST(1) = SSP $ IIT(1)= IIR $ SIT(1) = SIR $ IST(1)= ISR
FXFACT = EXPF(-FKFAST*ARGP)

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DO 501 ICE = 2, 10
SUMSS=SUMII=SUMSI = SUMIS = 0.
SUMMIT = SUMMITR = SUMMITD = 0.
DO 175 M=1,N
EXPFI(M) = EXPFI(M)*EXFACT
EXPFI2 = 2.*(EXPFI(M) - 1.)
YAK = -TPK*WF(M)
YAKR = -EXPFI2*YAK
YAKRG = YAKR / QZ(M,ICE)
YAK = YAK + YAK
SUMSS = SUMSS + RS0(ICE,M) * RS1(ICE,M) * YAKRG
SUMSS = SUMSS - GS0(ICE,M)*GS1(ICE,M)*YAKR
SUMII = SUMII - R10(ICE,M) * R11(ICE,M) * YAKRG
SUMII = SUMII + G10(ICE,M)*G11(ICE,M)*YAKR
SUMSI = SUMSI - RS0(ICE,M) * R11(ICE,M) * YAKRG
SUMSI = SUMSI + GS0(ICE,M)*G11(ICE,M)*YAK
SUMIS = SUMIS + R10(ICE,M) * RS1(ICE,M) * YAKRG
SUMIS = SUMIS - G10(ICE,M)*GS1(ICE,M)*YAK
RSBS = RS0(ICE,M)*RS0(ICE,M)
RIBS = R10(ICE,M)*RS0(ICE,M)
RIRI = R10(ICE,M)*R10(ICE,M)
SUMMIT = SUMMIT + RSBS * YAKRG
SUMMITR = SUMMITR + RIRI * YAKRG
SUMMITD = SUMMITD + RIBS * YAKRG
375 CONTINUE
SST(ICE) = SST(ICE-1) + SUMSS
IIT(ICE) = IIT(ICE-1) + SUMII
SIT(ICE) = SIT(ICE-1) + SUMSI
IST(ICE) = IST(ICE-1) + SUMIS
SUMT(ICE) = SUMT(ICE-1) + SUMMIT
RUMT(ICE) = RUMT(ICE-1) + SUMMITR
501 DUMT(ICE) = DUMT(ICE-1) + SUMMITD
AA = 4.*ROUT*ROUT
P = ARGP
PP = P*P
OK = AA/(PP + AA)
SDK = SQRT(OK)
CF2 = -P*SDK*ELLIPK(DK)/(PI*AA)
SSR= ROUT*(SST(JTOP) + CF2 + CF2)
AA = RIN*RIN*4.
DK = AA/(PP + AA)
SDK = SQRT(DK)
CF2 = -P*SDK*ELLIPK(DK)/(PI*AA)
IIR= RIN*(IIT(JTOP) - CF2 - CF2)
SSI = ROUT*SSI $ IIR= RIN*IIR $ SII= RIN*SII $ ISI=ROUT*ISI
ICE = 10
FL = (ICE-1)*FKFAST
NOEXT = 0
CALL CFINT(ARGP,ROUT,RIN,FL,CFIS)
CALL CFINT(ARGP,RIN,ROUT,FL,CFP) $ CFSI= -CFP
SIT(ICE) = SIT(ICE) + CFSI + CFSI
IST(ICE) = IST(ICE) + CFIS + CFIS
SIR = RIN*SIT(ICE) $ ISR = ROUT*IST(ICE)
ISR = ISR - 1.0
JM = 9
FLAM = FKFAST*JM

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CALL CFZERO(ARGP,ROUT,ROUT,FLAM,CP)
CALL CFZERO(ZERO,ROUT,ROUT,FLAM,CM)
CF1 = 2*(CP-CM)
CALL CFZERO(ARGP,RIN,RIN,FLAM,CP)
CALL CFZERO(ZERO,RIN,RIN,FLAM,CM)
CF2 = 2*(CP-CM)
CALL CFZERO(ARGP,ROUT,RIN,FLAM,CP)
CALL CFZERO(ZERO,ROUT,RIN,FLAM,CM)
CF3 = -2*(CP-CM)
ANSR = SUMT(ICE) + CF1
ANSRR = BUMT(ICE) + CF2
ANSRD = DUMT(ICE) - CF3
QI = -AIMAG(UMII)
IIV(1,1) = RIN*CMPLX(ANSRR,QI)
QI = -AIMAG(UMIS)
ISV(1,1) = ROUT*CMPLX(ANSRD,QI)
SIV(1,1) = RIN*CMPLX(ANSRD,QI)
QI = -AIMAG(UMSS)
SSV(1,1) = ROUT*CMPLX(ANSR,QI)
IIM(1,1) = -CMPLX(IIR,IIR) + (0.5,0.0)
SSM(1,1) = -CMPLX(SSR,SSI) + (0.5,0.0)
SIM(1,1) = -CMPLX(SIR,SII)
ISM(1,1) = -CMPLX(ISR,ISI)
DO 66 J=2,JMAX
Z = PLZ(J)
ARGP = Z0 - Z - DELZ
ARGM = Z0 - Z
SSI=SSR=III=IIR=SII=SIR=ISI=ISR=0.
SSIV=SSRV=IIIV=IIRV=SIIV=SIRV=ISIV=ISRV= 0.
DO 61 L=1,N
YAKR = -SSCOS(L,J-1)
YAKI = SSSIN(L,J-1)
ISR = ISR + B10(1,L)*BS1(1,L)*YAKR
ISI = ISI + B10(1,L)*BS1(1,L)*YAKI
SIR = SIR - BS0(1,L)*B11(1,L)*YAKR
SII = SII - BS0(1,L)*B11(1,L)*YAKI
III = III - B10(1,L)*B11(1,L)*YAKI
IIR = IIR - B10(1,L)*B11(1,L)*YAKR
SSR = SSR + BS0(1,L)*BS1(1,L)*YAKR
SSI = SSI + BS0(1,L)*BS1(1,L)*YAKI
IIIV = IIIV + B10(1,L) * B10(1,L) * YAKI
IIRV = IIRV + B10(1,L) * B10(1,L) * YAKR
ISRV = ISRV + B10(1,L) * BS0(1,L) * YAKR
ISIV = ISIV + B10(1,L) * BS0(1,L) * YAKI
SSRV = SSRV + BS0(1,L) * BS0(1,L) * YAKR
61 SSIV = SSIV + BS0(1,L) * BS0(1,L) * YAKI
SIIV = ISIV $ SIRV = ISRV
FACT1 = PI * 0.5 / (ROUT - RIN)
FACT = 2./(A*PI*ARGM)
SST(1) = SSR $ IIT(1)= IIR $ SIT(1) = SIR $ IST(1)= ISR
SSB(1)= SSRV $ IIB(1)= IIRV $ SIB(1) = SIRV $ ISB(1) = ISRV
ICE = 1
2 ICE = ICE + 1
SUMSS=SUMII=SUMSI = SUMIS = 0.
VUMSS = VUMII=VUMSI=VUMIS = 0.
DO 376 M=1,N

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VAKR = SSFXP(M,J-1,ICF)
VUMSS = VUMSS + RS0(ICF,M)*RS0(ICE,M)*VAKR
VUMIS = VUMIS + RI0(ICF,M)*RS0(ICE,M)*VAKR
VUMII = VUMII + RI0(ICF,M)*RI0(ICE,M)*VAKR
SUMSI = SUMSI - RS0(ICF,M) * RI1(ICF,M) * VAKR
SUMIS = SUMIS + RI0(ICF,M) * RS1(ICE,M) * VAKR
SUMSS = SUMSS + RS0(ICF,M) * RS1(ICE,M) * VAKR
376 SUMII = SUMII - RI0(ICF,M) * RI1(ICF,M) * VAKR
VUMSI = VUMIS
SST(ICF) = SST(ICE-1) + SUMSS
IIT(ICF) = IIT(ICE-1) + SUMII
IST(ICF) = IST(ICE-1) + SUMIS
SIT(ICF) = SIT(ICE-1) + SUMSI
SSR(ICE) = SSR(ICE-1) + VUMSS
IIR(ICE) = IIR(ICE-1) + VUMII
ISR(ICE) = ISR(ICE-1) + VUMIS
SIR(ICE) = SIR(ICE-1) + VUMSI
FL = (ICE - 1)*FKFAST
FLT = FL + FACT1
ERFC = (FACT/FL)*(EXP(-ARGP*FL) - EXP(- ARGP*FLT))
ERFC = ERFC/SIT(ICE)
ERFC = ABS(ERFC)
IF(ERFC.LE.EPS) GO TO 3
IF(ICE.GE.10) GO TO 3
GO TO 2
3 SSI = ROUT*SSI $ IIT= RIN*IIT $ SII= RIN*SII $ ISI=ROUT*ISI
NOEXT = 0
CALL CFINT(ARGM, RIN, ROUT, FL, CFM)
CALL CFINT(ARGP, RIN, ROUT, FL, CFP)
SIT(ICE) = SIT(ICE) - (CFP - CFM)
CALL CFINT(ARGP, RIN, RIN, FL, CFP)
NOEXT = 1
CALL CFZERO(ARGP, RIN, RIN, FL, CP)
NOEXT = 0
CALL CFINT(ARGM, RIN, RIN, FL, CFM)
NOEXT = 1
CALL CFZERO(ARGM, RIN, RIN, FL, CM)
IIT(ICE) = IIT(ICE) - (CFP - CFM)
IIR(ICE) = IIR(ICE) + (CP - CM)
NOEXT = 0
CALL CFINT(ARGP, ROUT, ROUT, FL, CFP)
NOEXT = 1
CALL CFZERO(ARGP, ROUT, ROUT, FL, CP)
NOEXT = 0
CALL CFINT(ARGM, ROUT, ROUT, FL, CFM)
NOEXT = 1
CALL CFZERO(ARGM, ROUT, ROUT, FL, CM)
SST(ICE) = SST(ICE) + (CFP - CFM)
SSR(ICE) = SSR(ICE) + (CP - CM)
NOEXT = 0
CALL CFINT(ARGP, ROUT, RIN, FL, CFP)
NOEXT = 1
CALL CFZERO(ARGP, ROUT, RIN, FL, CP)
NOEXT = 0
CALL CFINT(ARGM, ROUT, RIN, FL, CFM)
NOEXT = 1

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CALL CFZERO(ARGM, ROUT, RIN, FL, CM)
IST(ICE) = IST(ICE) + (CFP - CFM)
ISB(ICE) = ISB(ICE) + (CP - CM)
SIB(ICE) = SIB(ICE) + (CP - CM)
SSR = ROUT*SSI(ICE) $ IIR = RIN*IIT(ICE)
SIR = RIN*SIT(ICE) $ ISR = ROUT*IST(ICE)
SSIV = ROUT*SSIV $ IIIV = RIN*IIIV $ SIIV = RIN*SIIV
ISIV = ROUT*ISIV
SIRV = RIN*SIB(ICE) $ ISRV = ROUT*ISB(ICE)
SSRV = ROUT*SSB(ICE) $ IIRV = RIN*IIR(ICE)
SS = CMPLX(SSR,SSI) $ II = CMPLX(IIR,IIIV)
SSM(1,J)=SS
ISM(1,J)=          CMPLX(ISR,ISI)
SIM(1,J)=          CMPLX(SIR,SII)
IIM(1,J)=II
SSV(1,J)=          -CMPLX(SSRV,SSIV)
IIV(1,J)=          -CMPLX(IIKV,IIIV)
ISV(1,J)=          -CMPLX(ISRV,ISIV)
SIV(1,J)=          -CMPLX(SIRV,SIIV)
IF(J.GT.JMAXH) GO TO 66
SSM(J,1)=SSM(1,J) $ SSV(J,1)=SSV(1,J) $ ISM(J,1)=ISM(1,J)
SIM(J,1)=SIM(1,J) $ ISV(J,1)=ISV(1,J) $ IIM(J,1)=IIM(1,J)
IIV(J,1)=IIV(1,J) $ SIV(J,1)=SIV(1,J)
66 CONTINUE
DO 12 J=1,JMAX
JILT = JMAX-J+1
DO 11 M=2,JILT
IF(M.GT.JMAXH) GO TO 661
SSM(M,M+J-1) = SSM(1,J)
SSV(M,M+J-1) = SSV(1,J)
ISM(M,M+J-1) = ISM(1,J)
ISV(M,M+J-1) = ISV(1,J)
IIM(M,M+J-1) = IIM(1,J)
IIV(M,M+J-1) = IIV(1,J)
SIM(M,M+J-1) = SIM(1,J)
SIV(M,M+J-1) = SIV(1,J)
601 CONTINUE
IF(M+J-1.GT.JMAXH) GO TO 11
SSM(M+J-1,M) = SSM(1,J)
SSV(M+J-1,M) = SSV(1,J)
ISM(M+J-1,M) = ISM(1,J)
ISV(M+J-1,M) = ISV(1,J)
IIM(M+J-1,M) = IIM(1,J)
IIV(M+J-1,M) = IIV(1,J)
SIM(M+J-1,M) = SIM(1,J)
SIV(M+J-1,M) = SIV(1,J)
11 CONTINUE
12 CONTINUE
END

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ROGERS AND ZALESAK

SUBROUTINE CTSM

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COMMON/ICE/ICE,NOEXT
TYPE COMPLEX TIV,TSV,TIM,TSM,ANS,ANSR,VNS,VNSR
DIMENSION TSM(10,20),TIM(10,20),TSV(10,20),TIV(10,20)
DIMENSION PZ(20),PL7(20),PR(20),PLR(20)
COMMON/EPS/EPS/JOE/JTOP
COMMON/BLK1/H,A,FK,PI/RAD/RIN,ROUT/PIT/JMAX,JMAXH,IMAX/IJK/I,J
COMMON/TIM/TIM/BLK0/TSM/TIV/TIV/TSV/TSV/BLKA/PR,PLR,PZ,PLZ
DIMENSION RS0(10,32),RS1(10,32),EX(32)
DIMENSION B10(10,32),B11(10,32),G10(10,32),G11(10,32)
DIMENSION SUMTV(10),RUMTV(10),XI(32),WF(32),SUMT(10),RUMT(10)
DIMENSION GS0(10,32),GS1(10,32),GGMS(10,32)
COMMON/5/BT0(10,10,32),BT1(11,10,32),QZ(32,10),SIGMA(32),REST(128)
COMMON/6/G10(10,10,32),TSEXP(32,20,10)
COMMON/RBOLD/G10,G11/DEL/DELR,DELZ/ROLD/GS0,GS1
COMMON/BLK3/BS0,BS1/TIDY/FAST/FS/FKFK,FKFAST,TFK
COMMON/BLK3R/B10,B11/TOY/N,NN,NNN/BLK2/XI,WF/GGMS/GGMS
COMMON/STORCST/TSSIN(32,21),TSCOS(32,21)
TPK = 0.25 * FKFAST
PIOTWO = 0.5 * PI
EPS1 = 0.0001
DO 20 I=1,IMAX
  R = PR(I)
  IR = I
  DO 20 J= 1,JMAX
    Z = PLZ(J)
    ARGP = H - Z - DELZ
    IF (J.EQ. 1) ARGP = 0.0
    ARGM = H - Z
    SUMR=SUMI=SUMRB=SUMTR=SUMRV=SUMIV=SUMRBV=SUMIRV=0.
    DO 1 L = 1,N
      TRIGFR = TSCOS(L,J) * BT0(IR,1,L)
      TRIGFI = TSSIN(L,J) * BT0(IR,1,L)
      SUMR = SUMR - TRIGFR * BS1(1,L)
      SUMI = SUMI + TRIGFI * BS1(1,L)
      SUMRB = SUMRB + TRIGFR * B11(1,L)
      SUMTR = SUMTR - TRIGFI * B11(1,L)
      SUMRV = SUMRV - TRIGFR * RS0(1,L)
      SUMIV = SUMIV - TRIGFI * RS0(1,L)
      SUMRBV = SUMRBV - TRIGFR * B10(1,L)
      SUMIRV = SUMIRV - TRIGFI * B10(1,L)
1 CONTINUE
    SUMT(1) = SUMR $ RUMT(1) = SUMRB
    SUMTV(1) = SUMRV $ RUMTV(1) = SUMRBV
    IF(J.EQ.1) GO TO 54321
    FACT = 2./(R*PI*ARGP)
54321 CONTINUE
    FACT1 = PIOTWO / AMINI(ROUT - R, R - RIN)
    EFACT1 = 1.0 - EXP(-ARGP * FACT1)
    ANSTR = RIN*SUMRB
    ANST = ROUT*SUMR
    FL = 0.0
    ICF = 1
2 ICF = ICE + 1
    SUMMIT=SUMMITR=VUMMIT=VUMMITR=0.

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DO 375 M=1,N
GMR = BTO(IR,ICF,M) * TSFXP(M,J,ICE)
ARTIST = BS1(ICE,M) * GMR
ARTISTR = B11(ICE,M) * GMR
ARTISTV = GMR*BS0(ICE,M)
VRTISTR = GMR*B10(ICE,M)
VUMMIT = VUMMIT + ARTISTV
VUMMITR = VUMMITR + VRTISTR
IF(J.EQ.1) GO TO 93
GO TO 94
93 GS = GT0(IR,ICF,M)*WF(M) *TPK
GSGS = GS*GS1(ICE,M)
GSGSI = GS*G11(ICE,M)
ARTIST = ARTIST - GSGS $ ARTISTR = ARTISTR - GSGSI
94 SUMMIT = SUMMIT + ARTIST
SUMMITR = SUMMITR - ARTISTR
375 CONTINUE
RUMT(ICE) = BUMT(ICE-1) + SUMMITR
SUMT(ICE) = SUMT(ICE-1) + SUMMIT
SUMTV(ICE) = SUMTV(ICE-1) + VUMMIT
RUMTV(ICE) = RUMTV(ICE-1) + VUMMITR
FL = FL + FKFAST
IF(J.EQ.1) GO TO 95
FLT = FL + FACT1
ERFC = ABS(FACT * EXPF(-ARGP * FL) * EFACT1 / (FL * SUMT(ICE)))
IF(ERFC.LT.EPS) GO TO 8
IF(ICE.GE.JTOP) GO TO 8
GO TO 2
95 ANSR = ROUT*SUMT(ICE) + .50
ANSRB = RIN*BUMT(ICE)
TESTER = ABS(1.0 - ANST / ANSR)
TESTERR = ABS(1.0 - ANSTR / ANSRB)
IF(ICE.GE.JTOP) GO TO 100
IF(1TESTER.LT.EPS1.+ND.TESTERR.LT.EPS1) GO TO 100
ANST = ANSR
ANSTR = ANSRB
GO TO 2
100 CONTINUE
NOEXT = 0
CALL CFINT(ARGM, ROUT, PR(IR), FL, CFM)
SUMT(ICE) = SUMT(ICE) - CFM
NOEXT = 1
CALL CFZERO(ARGM, ROUT, PR(IR), FL, CFM)
NOEXT = 0
CALL CFZERO(ARGP, ROUT, PR(IR), FL, CFP)
SUMTV(ICE) = SUMTV(ICE) + CFP - CFM
CALL CFINT(ARGM, RIN, PR(IR), FL, CFM)
BUMT(ICE) = BUMT(ICE) + CFM
NOEXT = 1
CALL CFZERO(ARGM, RIN, PR(IR), FL, CFM)
NOEXT = 0
CALL CFZERO(ARGP, RIN, PR(IR), FL, CFP)
RUMTV(ICE) = RUMTV(ICE) + CFP - CFM
GO TO 3
8 NOEXT = 0
CALL CFINT(ARGP, ROUT, PR(IR), FL, CFP)

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SUMT(ICE) = SUMT(ICE) + CFP
NOEXT = 1
CALL CFZERO(ARGP, ROUT, PR(IR), FL, CFP)
SUMTV(ICE) = SUMTV(ICE) + CFP
NOEXT = 0
CALL CFINT(ARGM, ROUT, PR(IR), FL, CFM)
SUMT(ICE) = SUMT(ICE) - CFM
NOEXT = 1
CALL CFZERO(ARGM, ROUT, PR(IR), FL, CFM)
SUMTV(ICE) = SUMTV(ICE) - CFM
NOEXT = 0
CALL CFINT(ARGP, RIN, PR(IR), FL, CFP)
BUMT(ICE) = BUMT(ICE) - CFP
NOEXT = 1
CALL CFZERO(ARGP, RIN, PR(IR), FL, CFP)
BUMTV(ICE) = BUMTV(ICE) + CFP
NOEXT = 0
CALL CFINT(ARGM, RIN, PR(IR), FL, CFM)
BUMT(ICE) = BUMT(ICE) + CFM
NOEXT = 1
CALL CFZERO(ARGM, RIN, PR(IR), FL, CFM)
BUMTV(ICE) = BUMTV(ICE) - CFM
3 CONTINUE
ANS = CMPLX(SUMT(ICE),SUMI)
ANSB = CMPLX(BUMT(ICE),SUMIB)
VNS =CMPLX(-SUMTV(ICE),SUMIV)
VNSB =CMPLX(-BUMTV(ICE),SUMIBV)
TSM(I,J) = ANS*ROUT $ TIM(I,J) = RIN*ANSB
TSV(I,J) = VNS*ROUT $ TIV(I,J) = RIN*VNSB
IF(J.EQ.1) TSM(I,J) = TSM(I,J) + 0.500
20 CONTINUE
END

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SUBROUTINE CALTRIG

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COMMON/BLK2/XI,WF/BLK1/H,R,FK,PI/STORSCST/RSIN,TRCOS,TREXP
COMMON/TOY/NQD1,ISYM,ICOR/TIDY/FAST
DIMENSION TRSIN(32),TRCOS(32),TREXP(32,10),XI(32),WF(32)
EQUIVALENCE (TRCOS(1),TREXP(1))
COMMON/FS/FKFK,FKFAST,TFK
COMMON/PIT/JMAX,JMAXH,IMAX/DEL/DELR,DELZ
COMMON/STORSCST/STSIN(32,21),STCOS(32,21)
DIMENSION STEMP(32),CTEMP(32),ETEMP(32,10)
COMMON/5/RT0(10,10,32),RT1(11,10,32),QZ(32,10),SIGMA(32),REST(128)
COMMON/6/GT0(10,10,32),STEXP(32,20,10)
EQUIVALENCE (STSIN(1),TSSIN(1)), (STCOS(1),TSCOS(1))
EQUIVALENCE (STEXP(1),TSEXP(1))
DIMENSION TSSIN(32,21),TSCOS(32,21),TSEXP(32,20,10)
FKFK = FK * FK $ TFK = 0.25 * FK $ FKFAST = 2.0 * FAST * FK
TPK = 0.25 * FKFAST
RTPKSQ = 1.0 / (TPK * TPK)
N = NQD1
A = H + H
DO 300 L = 1, N
R = A * SIGMA(L)
TRSIN(L) = SIN(R) * TFK
TRCOS(L) = COS(R) * TFK
300 CONTINUE
A = -4.0 * FAST * H
B = FK * A
TBMULT = EXP(R)
DO 301 M = 1, N
R = A * SIGMA(M)
TREXP(M,2) = EXP(R) * TPK
DO 302 ICE = 3, 10
TREXP(M,ICE) = TREXP(M,ICE-1) * TBMULT
302 CONTINUE
301 CONTINUE
RETURN
ENTRY STTRIG
HZ = 0.5 * DELZ
DO 350 L = 1, N
A = HZ * SIGMA(L)
STSIN(L,1) = SIN(A)
STCOS(L,1) = COS(A)
PROD = STSIN(L,1) * STCOS(L,1)
STEMP(L) = PROD + PROD
PROD = STCOS(L,1) * STCOS(L,1)
CTEMP(L) = PROD + PROD - 1.0
STSIN(L,1) = STSIN(L,1) * TFK
STCOS(L,1) = STCOS(L,1) * TFK
DO 351 IR = 2, JMAX
STSIN(L,IR) = STSIN(L,IR-1) * CTEMP(L) + STCOS(L,IR-1) * STEMP(L)
STCOS(L,IR) = STCOS(L,IR-1) * CTEMP(L) - STSIN(L,IR-1) * STEMP(L)
351 CONTINUE
350 CONTINUE
HZ = -HZ
STEMULT = EXP(HZ * FKFAST)
DO 352 M = 1, N

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      STEXP(M,1,1) = EXP(MZ * QZ(M,1)) * TPK
      DO 353 ICE = 2, 10
      STEXP(M,1,ICE) = STEXP(M,1,ICE-1) * STMULT
      ETEMP(M,ICE) = STEXP(M,1,ICE) * STEXP(M,1,ICE) * RTPKSQ
      DO 354 IR = 2, JMAX
      STEXP(M,IR,ICE) = STEXP(M,IR-1,ICE) * ETEMP(M,ICE)
354 CONTINUE
353 CONTINUE
352 CONTINUE
      RETURN
      ENTRY SSTRIG
      DO 370 L = 1, N
      DO 371 J = 2, JMAX
      STSIN(L,J-1) = (STSIN(L,J-1)-STSIN(L,J)) * WF(L) / SIGMA(L)
      STCOS(L,J-1) = (STCOS(L,J-1)-STCOS(L,J)) * WF(L) / SIGMA(L)
      DO 372 ICE = 2, 10
      STEXP(L,J-1,ICE) = (STEXP(L,J-1,ICE)-STEXP(L,J,ICE)) * WF(L) /
      $ QZ(L,ICE)
372 CONTINUE
371 CONTINUE
370 CONTINUE
      RETURN
      ENTRY TSTRIG
      JMAXP = JMAX + 1
      DO 400 L = 1, N
      TSSIN(L,1) = 0.0
      TSCOS(L,1) = TFK * WF(L) / SIGMA(L)
      DO 401 J = 2, JMAXP
      TSSIN(L,J) = TSSIN(L,J-1) * CTEMP(L) + TSCOS(L,J-1) * STEMP(L)
      TSCOS(L,J) = TSCOS(L,J-1) * CTEMP(L) - TSSIN(L,J-1) * STEMP(L)
      TSSIN(L,J-1) = TSSIN(L,J-1) - TSSIN(L,J)
      TSCOS(L,J-1) = TSCOS(L,J-1) - TSCOS(L,J)
401 CONTINUE
400 CONTINUE
      DO 402 M = 1, N
      DO 403 ICE = 2, 10
      TSEXP(M,1,ICE) = WF(M) * (1.0 - ETEMP(M,ICE)) * TPK / QZ(M,ICE)
      DO 404 J = 2, JMAX
      TSEXP(M,J,ICE) = TSEXP(M,J-1,ICE) * ETEMP(M,ICE)
404 CONTINUE
403 CONTINUE
402 CONTINUE
      RETURN
      END

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SUBROUTINE CALRES

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DIMENSION P7(20),PL7(20),PR(20),PLR(20),XI(32),WF(32)
DIMENSION R10(10,32),R11(10,32),G10(10,32),G11(10,32)
DIMENSION GS0(10,32),GS1(10,32),RS0(10,32),RS1(10,32)
COMMON/RLKA/PR,PLR,PZ,PLZ/PIT/JMAX,JMAXH,IMAX/RCC/JTOP
COMMON/5/BT0(10,10,32),BT1(11,10,32),QZ(32,10),SIGMA(32),REST(128)
COMMON/6/GT0(10,10,32),GT1(11,10,32),RUST1(2880)
COMMON/TOY/NQD1,NQD2,NQD3/ROLD/GS0,GS1/RLK1/H,A,FK,PI/RLK2/XI,WF
COMMON/RLK3B/B10,R11/ROLD/G10,G11/TIDY/FAST/RLK3/RS0,RS1
COMMON/RAD/RIN,ROUT/GGMS/GGMS
DIMENSION GGMS(10,32)
N=NQD1
FKFK = FK*FK
FKFAST = 2.*FAST*FK
DO 9 L=1,N
SIGMA(L) = XI(L) + 0.5 * FK
QZ(L,1) = FAST * (XI(L) + XI(L) - FK)
QQ = SIGMA(L) * SIGMA(L)
D = SQRT(FKFK - QQ)
GGMS(1,L) = D
T=D*ROUT $ TI = D*RIN
CALL BESL(T,BSJ0,BSJ1,Y0,Y1)
CALL BESL(TI,BIJ0,BIJ1,Y0,Y1)
R10(1,L) = BIJ0 $ R11(1,L) = BIJ1 * D
RS0(1,L) = BSJ0
RS1(1,L) = BSJ1 * D
BT1(1,1,L) = BIJ1 * RIN * WF(L) / D
BT1(IMAX + 1,1,L) = BSJ1 * ROUT * WF(L) / D
9 CONTINUE
DO15 ICE=2,JTOP
DO16 M=1,N
QZ(M,ICE) = QZ(M,ICE - 1) + FKFAST
RHO = QZ(M,ICE)
QQR = RHO*RHO
GMS = SQRT(QQR + FKFK)
GGMS(ICE,M) = GMS
TM = GMS*ROUT $ SM = RHO*ROUT
TIM = GMS*RIN $ SIM = RHO*RIN
CALL BESL(SM,GST0,GST1,Y1,Y2)
CALL BESL(TIM,BST0,BST1,Y2,Y3)
CALL BESL(SIM,GIT0,GIT1,Y1,Y0)
CALL BESL(TIM,BIT0,BIT1,YK,Y0)
R10(ICE,M) = BIT0 $ R11(ICE,M) = BIT1 * GMS $ G10(ICE,M) = GIT0
G11(ICE,M) = GIT1
RS0(ICE,M) = BST0
RS1(ICE,M) = BST1 * GMS
GS0(ICE,M) = GST0
GS1(ICE,M) = GST1
RT1(1,ICE,M) = RIN * RIT1 * WF(M) / GMS
RT1(IMAX + 1,ICE,M) = ROUT * BST1 * WF(M) / GMS
GT1(1,ICE,M) = RIN * GIT1 * WF(M) / RHO
GT1(IMAX + 1,ICE,M) = ROUT * GST1 * WF(M) / RHO
16 CONTINUE
15 CONTINUE
ODELR = (ROUT - RIN)/IMAX

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ROGERS AND ZALESAK

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DELR = .5*DDELR
RL = RTN - DDDELR
DO 5 IMP=1,IMAX
RL = RL + DDDELR
DO 1 L=1,N
D = GGMS(1,1)
T= D*PR(IMP)
T1= D*(PR(IMP) - DELR)
CALL RES0(T,RT0(IMP,1,L))
IF(IMP.EQ.1) GO TO 1
CALL RES1(T1,RT1(IMP,1,L))
RT1(IMP,1,L) = RT1(IMP,1,L) * RL * WF(L) / D
1 CONTINUE
DO 5 ICE=2,JTOP
DO 6 M=1,N
RHO = Q7(M,ICE)
GMS = GGMS(ICE,M)
SM = RHO*PR(IMP) $ SM1 = RHO*(PR(IMP) - DELR)
TM = GMS*PR(IMP) $ TM1 = GMS*(PR(IMP) - DELR)
CALL RES0(TM,BT0(IMP,ICE,M))
CALL RES0(SM,GT0(IMP,ICE,M))
IF(IMP.EQ.1) GO TO 6
CALL RES1(TM1,BT1(IMP,ICE,M))
BT1(IMP,ICE,M) = BT1(IMP,ICE,M) * RL * WF(M) / GMS
CALL RES1(SM1,GT1(IMP,ICE,M))
GT1(IMP,ICE,M) = GT1(IMP,ICE,M) * RL * WF(M) / RHO
6 CONTINUE
5 CONTINUE
DO 20 ICE = 1, JTOP
DO 21 M = 1, N
DO 22 IMP = 1, IMAX
BT1(IMP,ICE,M) = BT1(IMP+1,ICE,M) - BT1(IMP,ICE,M)
IF(ICE.EQ.1) GO TO 22
GT1(IMP,ICE,M) = GT1(IMP+1,ICE,M) - GT1(IMP,ICE,M)
22 CONTINUE
21 CONTINUE
20 CONTINUE
RETURN
END

```

00016600
00016700

00018700
00018800

00018900

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SUBROUTINE CFINT(A,R,C,X,ANS)

COMPLEX ARG1, ARG3, F1, F3
COMMON/ICE/ICE,NOEXI/JOE/JTOP1/SAVE/ISAVE,EXMZR,EXMZI
DIMENSION AIRG(2), A3RG(2), FF1(2), FF3(2), SAVER(2)
EQUIVALENCE (ARG1,AIRG), (ARG3,A3RG), (F1,FF1), (F3,FF3)
DATA (PII = 0.15915494309)
IF(ICE .LT. JTOP1) GO TO 400
FACT = 1.
IFLAG = 0
NFLAG = 0
GO TO 1
ENTRY CFONE
IF(ICE .LT. JTOP1) GO TO 400
FACT = 1. / X
IFLAG = 1
NFLAG = 0
GO TO 1
ENTRY CFZERO
IF(ICE .LT. JTOP1) GO TO 400
FACT = 1. / X
IFLAG = 1
NFLAG = 1
1 CONTINUE
FM = PII / SQRT(R * C)
AIRG(1) = A * X
AIRG(2) = - (B - C) * X
A3RG(1) = AIRG(1)
A3RG(2) = - (B + C) * X
IF(IFLAG .EQ. 1) GO TO 2
CALL EXI(ARG1,F1)
NSAVE = ISAVE $ SAVER(1) = EXMZR $ SAVER(2) = EXMZI
CALL EXI(ARG3,F3)
GO TO 3
2 CALL EXI2(ARG3, F3)
ISAVE = NSAVE $ EXMZR = SAVER(1) $ EXMZI = SAVER(2)
CALL EXI2(ARG1, F1)
3 CONTINUE
IF(NFLAG .EQ. 0) ANS = FM * (FF1(2) + FF3(1))
IF(NFLAG .EQ. 1) ANS = FM * (FF1(1) + FF3(2))
ANS = ANS * FACT
RETURN
400 ANS = 0.0
RETURN
END

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ROGERS AND ZALESAK

```

SUBROUTINE EXI(Z,ANS)

COMPLEX Z, ANS
COMPLEX ZZ, AANS
DIMENSION R(2), SUM(2)
EQUIVALENCE (ZZ,R), (AANS,SUM)
COMMON/SAVE/ISAVE,EXMR,EXMI
DIMENSION FACT(40)
DATA (ISTORE = 0), (PIOTWO = 1.5707963268)
IF (ISTORE .EQ. 1) GO TO 410
DO 320 N = 1, 40
FACT(N) = - FLOAT(N - 1) / FLOAT(N * N)
320 CONTINUE
ISTORE = 1
410 CONTINUE
K = 1
GAMMA = 0.5772156649
ZZ = Z
R1R1 = R(1) * R(1)
R2R2 = R(2) * R(2)
U = R1R1 + R2R2
IF (U.GT.100.0) GO TO 400
ISAVE = 0
IF (R1R1 .GT. R2R2) SU = R(1) + 0.5 * R2R2 / R(1)
IF (R1R1 .LE. R2R2) SU = ABS( R(2) + 0.5 * R1R1 / R(2) )
EN = 6.0 + 3.5 * SU
NN = EN
IF (NN .GT. 40) NN = 40
SUM(1) = -R(1) $ SUM(2) = -R(2)
TERMR = -R(1) $ TERMI = -R(2)
DO 300 N = 2, NN
X = (TERMR*R(1) - TERMI*R(2)) * FACT(N)
Y = (TERMR*R(2) + TERMI*R(1)) * FACT(N)
TERMR = X
TERMI = Y
SUM(1) = SUM(1) + TERMR
SUM(2) = SUM(2) + TERMI
300 CONTINUE
ELNRZ = 0.5 * ALOG(U)
IF (R(1) .NE. 0.0) FLNIZ = ATAN(R(2) / R(1))
IF (R(1) .EQ. 0.0) ELNIZ = SIGN(PIOTWO, R(2))
SUM(1) = -GAMMA - ELNRZ - SUM(1)
SUM(2) = -ELNIZ - SUM(2)
ANS = AANS
RETURN
400 CONTINUE
ISAVE = 1
ONEOU = 1.0 / U
SUM(1) = 1.0 $ SUM(2) = 0.0
TERMR = 1.0 $ TERMI = 0.0
EEMMEE = 0.0
DO 310 N = 1, 4
EEMMFE = EEMMEE + 1.0
FFF = EEMMEE * ONEOU
X = - FFF * (TERMR*R(1) + TERMI*R(2))
Y = FFF * (TERMR*R(2) - TERMI*R(1))

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      TERMR = X
      TERMJ = Y
      SUM(1) = SUM(1) + TERMR
      SUM(2) = SUM(2) + TERMJ
310 CONTINUE
      E = EXP(-R(1))
      X = E * COS(R(2))
      Y = -E * SIN(R(2))
      EXMR = X
      EXMJ = Y
      FACTR = (X * R(1) + Y * R(2)) * ONEOU
      FACTJ = (Y * R(1) - X * R(2)) * ONEOU
      X = FACTR * SUM(1) - FACTJ * SUM(2)
      Y = FACTR * SUM(2) + FACTJ * SUM(1)
      SUM(1) = X
      SUM(2) = Y
      ANS = AANS
      RETURN
      END
```

ROGERS AND ZALESAK

```

SUBROUTINE EXI2(Z,ANS)

COMMON/SAVE/ISAVE,EXMZR,EXMZI/ICF/ICE,NOEXI
COMPLEX Z,ANS
COMPLEX ZZ, AANS
DIMENSION B(2) , A(2)
EQUIVALENCE (Z,B), (AANS,A)
AANS = ANS
ZZ = Z
K = 1
TEST1 = REAL(ZZ)
TEST2 = AIMAG(ZZ)
IF(TEST1 .EQ. 0.0 .AND. TEST2 .EQ. 0.0) GO TO 1
IF(NOEXI .EQ. 0) CALL EXI(ZZ, AANS)
X = A(1)*B(1) - A(2)*B(2)
Y = A(1)*B(2) + A(2)*B(1)
IF(ISAVE .EQ. 1) GO TO 400
E = EXP(-B(1))
EXMZR = E * COS(B(2))
EXMZI = -E * SIN(B(2))
400 CONTINUE
A(1) = EXMZR - X
A(2) = EXMZI - Y
ANS = AANS
RETURN
A(1) = 1.0
A(2) = 0.0
ANS = AANS
RETURN
END

```

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SUBROUTINE GQC

```

TYPE DOUBLE W,X                                00000200
COMMON/BLK1/H,A,FK,PI/TOY/NQD1,LL,MM/BLK2/XI,W
DIMENSION XI(32),WF(32),W(31),X(31)
DATA (PI = 3.14159265359)                      00000500
DATA(X = 0.1488743389816310000, 0.4333953941292470000,
* 0.6794095682990240000,0.8650633666889850000,
*0.9739065285171720000,
*      0.0765265211334973337550000,0.227785851141645078080000,
* 0.3737060887154195606730000,0.5108670019508270980040000,
* 0.6360536807265150254530000,0.7463319064601507926140000,
* 0.8391169718222188233950000, 0.9122344282513259058680000,
* 0.9639719272779137912680000,0.9931285991850949247860000,
*      0.997263861849481563540000, 0.98561151154526833540000,
*0.964762255587506430770000, 0.934906075937739689170000,      00000700
* 0.896321155766052123960000, 0.849367613732569970130000,      00000800
* 0.794483795967942406960000, 0.732182118740289680380000,      00000900
* 0.663044266930215200970000, 0.587715757240762329040000,      00001000
* 0.506899908932229390020000, 0.421351276130635345360000,      00001100
*0.331868602282127649770000, 0.239287362252137074540000,      00001200
* 0.144471961582796493480000, 0.483076656877383162340-001)      00001300
DATA(W= 0.2955242247147530000, 0.2692667193099960000,
*0.2190863625159820000, 0.1494513491505810000,
*0.0666713443086880000,
*      0.1527533871307258506980000,0.1491729864726037467880000,
* 0.1420961093183820513290000,0.1316886384491766263980000,
* 0.1181945319615184173120000, 0.1019301198172404350370000,
* 0.0832767415767047487250000,0.0626720483341090635700000,
*0.0406014298003869413310000, 0.0176140071391521183120000,
*      0.701861000947009660040-002, 0.162743947309056706050-001, 00001400
* 0.253920653092620594550-001, 0.342738629130214331020-001,      00001500
* 0.428358980222266806560-001, 0.509980592623761762960-001,      00001600
*0.586840934785355471450-001, 0.65822227763618468370-001,      00001700
* 0.723457941088485062250-001, 0.781938957870703064710-001,      00001800
* 0.833119242269467552220-001, 0.876520930044038111420-001,      00001900
* 0.911738786957638847120-001, 0.938443990808045656390-001,      00002000
* 0.956387200792748594190-001, 0.965400885147278005660-001)      00002100
PFK = 0.5 * FK
NNL = NQD1/2      $ NRL = 0
IF(NQD1.EQ.20) NRL = 5
IF(NQD1.EQ.32) NRL = 15
DO 111 I=1,NNL
K = I + NRL
XI(I) = X(K) * PFK
WF(I) = W(K)
XI(I + NNL) = - X(K) * PFK
111 WF(I + NNL) = W(K)
RETURN
ENTRY TIME
TIMER = TIMELEFT(K)
PRINT 1, TIMER
1 FORMAT(* TIME LEFT *F10.3* SECONDS*//)
RETURN
END

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ROGERS AND ZALESK

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SUBROUTINE FARFLD
  DIMENSION PTOP(10),PINS(20),POUT(20),ANS(60)
  COMMON/LC/LCMAX,LCMAXH/DIST/DIST/RAU/RIN,ROUT/ANS/ANS
  COMMON/HLK1/H,A,FK,PI/DEL/DELR,DELZ/BLKA/PR,PLR,PZ,PLZ
  COMMON/PIT/JMAX,JMAXH,IMAX/VELO/VEL/RRCC/RRCC,NPTS
  COMMON/TOY/NQD1,ISYM,ICOR
  TYPE COMPLEX FFI,FFT,FFTB,RHOC,ADDIT1,SUM1,FFVT,FFVS,BJI,BJOUT,CEP
  1,CEM,PTOP,PINS,POUT,ANS,1,SUM,ADDIT,ARG1,VEL,PHOT,VINS,VOUT,VTOP,
  2 VHOT
  DIMENSION VEL(60),PBOT(10),VINS(20),VOUT(20),VTOP(10),VHOT(10)
  DIMENSION PZ(20),PLZ(20),PR(20),PLR(20)
  DATA(ALICE= 8.685889638)
  PRINT 700
700 FORMAT(1H1)
  IF (ICOR.EQ.0) GO TO 41
  PRINT 40,DIST
  40 FORMAT (//15X17HPATTERN AT DIST = E12.4//20X5HANGLE17X2HDB
    $ 15X9HMAGNITUDE/)
  GO TO 42
  41 PRINT 43
  43 FORMAT (/13X28HFARFIELD PATTERN AT INFINITY/20X5HANGLE17X2HDB
    $ 15X9HMAGNITUDE/)
  42 I = (0.,1.) $ RHOC = RRCC*I
  DD = 1./(2.*NPTS) $ DELTH = DD*PI $ DELTHD = 180.*DD
  NPT = NPTS-1 $ JMAXT = JMAXH
  IF(RIN.EQ.0.) JMAXH = 0
  DO 2 J=1,IMAX
    PBOT(J) = ANS(LCMAX - JMAXH + 1 - J)
    VBOT(J) = VEL(LCMAX - JMAXH + 1 - J)
    VTOP(J) = VEL(JMAXH + J)
  2 PTOP(J) = ANS(JMAXH+J)
  DO 3 J=1,JMAXT
    POUT(J) = ANS(IMAX+JMAXH+J)
    VOUT(J) = VEL(IMAX+JMAXH+J)
    VOUT(JMAX +1-J) = VEL(LCMAX +1 -JMAXH-IMAX - J)
  3 POUT(JMAX +1-J) = ANS(LCMAX +1 -JMAXH-IMAX - J)
  JMAXH = JMAXT
  IF(RIN.EQ.0.) GO TO 966
  DO 965 J=1,JMAXH
    PINS(J) = ANS(JMAXH+1-J)
    VINS(J) = VEL(JMAXH+1-J)
    VINS(JMAX+1 - J) = VEL(LCMAX -JMAXH + J)
  965 PINS(JMAX+1 - J) = ANS(LCMAX -JMAXH + J)
  GO TO 970
  966 DO 969 J=1,JMAX
    VINS(J) = (0.0,0.0)
  969 PINS(J) = (0.0,0.0)
  970 FFI= .5*FK*DELZ
  RO = FK*ROUT $ RI = FK*RIN
  CALL BESL(RO,B50,BJO,Y0,Y1) $ CALL BESL(RI,BSI,BJI,Y1,Y0)
  BO = B50*ROUT $ BI = BSI*RIN
  BJI = RIN*BJI $ BJOUT = ROUT*BJO
  IF(ICOR.EQ.0) GO TO 202
  BSI = RIN*RIN*BSI/DIST $ B50 = ROUT*ROUT*B50/DIST
  GO TO 203
  202 BSI=B50=0.

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203 BJOUT = BJOUT + I*HSO $ BJI = BJI + I*BSI
    SUM = (0.0,0.0)
    DO 37 K=1,JMAX
        ADDIT = (BJOUT*POUT(K) - BJI*PINS(K))
        ADDITI = RHOC*(VINS(K)*BI + VOUT(K)*BO)
        ADDIT = ADDIT - ADDITI
37  SUM = SUM + ADDIT
    FFI = FFI*SUM $ FFVT = (0.0,0.0)
    DO 38 K=1,IMAX
        RL = PR(K) - .5*DELX $ RU = RL + DELX
        TU = FK*RU $ TL = FK*RL
        CALL BES1(TU,BU) $ CALL BES1(TL,BL)
38  FFVT = FFVT - (VTOP(K) + VBOT(K))*(RU*BU - RL*BL)
    FFO = CABS(FFI + FFVT*.5*RHOC)
902 DEG = 0.0 $ FFOM = 0.0
    PRINT 33, DEG, FFOM, FFO
    DO 1 J=1,NPTS
        THETA = J*DELTH
        IF(J.EQ.NPTS) THETA = 8999.*PI/18000.
        COSTH = COS(THETA) $ SINTH = SIN(THETA)
        ARG1 = -I*FK*SINTH
        TT = RI*COSTH
        CALL BESL(TT,BS1,BJ1,Y0,Y1)
        BI = RIN*BS1
        TT = RO*COSTH
        CALL BESL(TT,BS2,BJ2,Y0,Y1)
        BJI = RIN*BJ1 $ BJOUT = ROUT*BJ2 $ BO = ROUT*BS2
        IF(ICOR.EQ.0) GO TO 205
        BSI = RIN*RIN*BS1/DIST $ HSO = ROUT*ROUT*BS2/DIST
        BJOUT = BJOUT*COSTH + I*BSO
        BJI = BJI*COSTH + I*BSI
        GO TO 207
205 BJOUT = BJOUT*COSTH
    BJI = BJI*COSTH
207 FFI = .5*I*(CEXP(ARG1*DELZ) - 1.)/SINTH
    SUM = (0.0,0.0)
    DO 4 K=J,JMAX
        CEM = CEXP(ARG1*PLZ(K))
        ADDIT = (BJOUT*POUT(K) - BJI*PINS(K))*CEM
        ADDITI = (VOUT(K)*BO + VINS(K)*BI)*RHOC*CEM
4  SUM = SUM + ADDIT -ADDITI
    FFI = FFI*SUM
    SUM = (0.0,0.0)
    FFTB = .5/COSTH
    ARG1 = I*FK*H*SINTH
    CEM = CEXP(-ARG1)
    CEP = CONJG(CEM)
    DO 5 K=1,IMAX
        RU = PR(K) + .5*DELX $ RL = PR(K) - .5*DELX
        TT = FK*RU*COSTH $ TTL = FK*RL*COSTH
        CALL BES1(TT,BU) $ CALL BES1(TTL,BL)
        RUBL = RU*BU - RL*BL
        ADDIT = -I*SINTH*(PBOT(K)*CEP - PTOP(K)*CEM)
        ADDITI = RHOC*(VTOP(K)*CEM + VBOT(K)*CEP)
5  SUM = SUM + (ADDIT - ADDITI)*RUBL
    FFTH = SUM*FTTB

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      FFM = CABS(FFI + FFTB)
      DEG = J*DELTHD
      FFPSURE = FFM
      FFM = ALICE*LOGF(FFM/FF0)
      PRINT 33, DEG, FFM, FFPSURE
33  FORMAT(5X, F20.3, F20.3, E25.6, /)
      1 CONTINUE
      IF (DEG.GE.0..AND.ISYM.NE.1) GO TO 900
      GO TO 901
900 DELTH = -DELTH $ DELTHD = -DELTHD
      GO TO 902
901 CONTINUE
      END

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SUBROUTINE SIMX( MAT,MCT,RHS,ANS)

DIMENSION OHOLD(60),MAT(60,60),RHS(30),ANS(MCT)
TYPE COMPLEX CC,CC2,OHOLD,RHS
DIMENSION C(2),CX(2),CX2(2)
TYPE COMPLEX MAT,ORIG,ANS,R0,R2,R4,R6,R8,R10,R11,R13,R15
TYPE INTEGER V
EQUIVALENCE (R2,C),(CC,CX),(CC2,CX2)
DO 101 I=1,MCT
DO 101 J=1,MCT
101 MAT(I+MCT,J) = MAT(I,J)
DO 100 J=1,MCT
OHOLD(J) = MAT(J,MCT+1)
100 MAT(J,MCT+1) = - RHS(J)
10 FORMAT(1X,C(E17.10,F17.10))
15 FORMAT(25H THIS MATRIX IS SINGULAR/)
28 FORMAT(1H1)
NCT=MCT+1
JSING=JFIN=MCT
IX=0% R4=(0.0,0.0)% R11=(1.0,0.0)
JCT=MCT-1
DO 3 J=1,JCT
KK=J+1
GOTO 25
24 DO 4 K=KK,MCT
B8=MAT(K,J)/MAT(J,J)
DO 5 L=J,NCT
R10=B8*MAT(J,L)
5 MAT(K,L)=MAT(K,L)-R10
4 CONTINUE
3 R11=R11*MAT(J,J)
R11=R11*MAT(MCT,MCT)
LOW=-MCT% MO=-1%
DO 6 INM=LOW,MO
M=IARS(INM)
R0=-MAT(M,NCT)
R2=MAT(M,M)
R4=(0.0,0.0)
IF(IX) 7,22,7
22 IX=IX+1
GOTO 8
7 MO2=-JFIN
DO 9 INN=LOW,MO2
N=IARS(INN)
9 R4=B4+MAT(M,N)*ANS(N)
R0=R0-R4% JFIN=JFIN-1
8 IF( C(1),EQ.0.,.AND.C(2),EQ.0.) 13,29
29 ANS(M)=R0/R2
6 CONTINUE
GO TO 27
25 V=J
CC=MAT(J,J)
IF( CX(1),EQ.0.,.AND.CX(2),EQ.0.) 11,12
11 IF(V,EQ.JSING)13,14
13 PRINT28% PRINT15
RETURN

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14	V=V+1	460
	CC2=MAT(V,J)	465
	IF(CX2(1).EQ.0..AND.CX2(2).EQ.0.) 11,16	470
16	DO 17 JJ=J,NCT	480
	B6=MAT(J,JJ)	490
	MAT(J,JJ)=MAT(V,JJ)	500
17	MAT(V,JJ)=B6	510
	B11=-B11	520
12	JSING=JSING-1	530
	GOTO 24	540
27	DO 200 J=1,MCT	
200	MAT(J,MCT+1) = OHOLD(J)	
	DO 102 I=1,MCT	
	DO 102 J=1,MCT	
102	MAT(I,J) = MAT(I+MCT,J)	
	END	

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```

SUBROUTINE BES1(X,RJ1)

  IF(X.GT.3.)GO TO 1
  XT = (X*X)/9.
  RJ1= X*(.5 +XT*(-.56249985 + XT*(.21093573 + XT*(-.03954289 +
1 XT*(.00443319 + XT*(-.00031761 + XT*.00001109))))))
  RETURN
1 XT = 3./X
  F1 = .79788456 +XT*(.00000156 + XT*(.01659667 + XT*(.00017105 +
1 XT*(-.00249511 + XT*(.00113653 - .00020033*XT))))
  T1= X - 2.35619449 + XT*(.12499612 + XT*(.00005650 +XT*(-.00637879
1 + XT*(.00074348 + XT*(.00079824 -.00029166*XT))))
  SX = SQRT(X)
  SX = 1./SX
  RJ1 = SX*F1*COS(T1)
  RETURN
ENTRY BES0
  IF(X.GT.3.) GO TO 5
  XT = (X*X)/9.
  RJ1=(1. + XT*(-2.2499997 + XT*(1.2656208 + XT*( -.3163866 +
1 XT*(.0444479 + XT*(-.0039444 + XT*.0002100))))))
  RETURN
5 XT = 3./X
  F0 = .79788456 +XT*(-.00000077 + XT*(-.00552740 + XT*(-.00009512
1 + XT*(.00137237 + XT*(-.00072805 + XT*.00014476))))
  T0 = X-.78539816 + XT*(-.04166397 + XT*(-.00003954 + XT*(.00262573
1 + XT*(-.00054125 + XT*(-.00029333 + .00013558*XT))))
  SX = SQRT(X)
  SX = 1./SX
  RJ1 = SX*F0*COS(T0)
  RETURN
END

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SUBROUTINE RESL(X,RJ0,RJ1,Y0,Y1)

```

      IF(X.GT.3.)GO TO 1
      XT = (X*X)/9.
      RJ0=(1. + XT*(-2.2499997 + XT*(1.2656208 + XT*(-.3163866 +
1 XT*(.0444479 + XT*(-.0039444 + XT*(.0002100))))))
      RJ1= X*(.5 +XT*(-.56249985 + XT*(.21093573 + XT*(-.03954289 +
1 XT*(.00443319 + XT*(-.00031761 + XT*(.00001109))))))
      RETURN
1 XT = 3./X
  F0 = .79788456 +XT*(-.00000077 + XT*(-.00552740 + XT*(-.00009512
1 + XT*(.00137237 + XT*(-.00072805 + XT*(.00014476))))))
  F1 = .79788456 +XT*(.00000156 + XT*(.01659667 + XT*(.00017105 +
1 XT*(-.00249511 + XT*(.00113653 - .00020033*XT))))
  T0 = X-.78539816 + XT*(-.04166397 + XT*(-.00003954 + XT*(.00262573
1 + XT*(-.00054125 + XT*(-.00029333 + .00013558*XT))))
  T1= X - 2.35619449 + XT*(.12499612 + XT*(.00005650 +XT*(-.00637879
1 + XT*(.00074348 + XT*(.00079824 -.00029166*XT))))
  SX = SQRT(X)
  SX = 1./SX
  RJ0 = SX*F0*COS(T0)
  RJ1 = SX*F1*COS(T1)
  RETURN
END

```

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FUNCTION FN(X)

```

DIMENSION AK(4),RK(4),AE(4),BE(4),A(4),R(4)
DIMENSION FA(4),FB(4),GA(4),GB(4)
DATA (FA=38.027264,265.187033,335.677320,38.102495)
DATA (FB=40.021433,322.624911,570.236280,157.105423)
DATA (GA = 42.242855,302.757865,352.018498,21.821899)
DATA (GB=48.196927,482.485984,1114.978885,449.690326)
DATA(F2=-.250000000), (F4=0.010416667), (F6=-.000231481)
DATA(F8=0.000003100), (F10=-.000000028), (F3=-.055555556)
DATA(F5=0.001666667), (F7=-.000028345), (F9=0.000000306), (F11=
1-.000000002)
DATA (AK= 0.09666344259,0.03590092383,0.03742563713,0.01451196212)
DATA(BK=0.12498593597,0.06880248576,0.03328355346,0.00441787012)
DATA(AE=0.44325141463,0.06260601220,0.04757383546,0.01736506451)
DATA(BE=0.24998368310,0.09200180037,0.04069967526,0.00526449639)
ENTRY CI
IFLAG = 1
IF(X.LT.1.) GO TO 1
27 XX=X*X
FDEN = FB(4) + XX*(FB(3) + XX*(FB(2) + XX*(FB(1) + XX)))
FNUM = FA(4) + XX*(FA(3) + XX*(FA(2) + XX*(FA(1) + XX)))
F = FNUM/(X*FDEN)
GNUM = GA(4) + XX*(GA(3) + XX*(GA(2) + XX*(GA(1) + XX)))
GDEN = GB(4) + XX*(GB(3) + XX*(GB(2) + XX*(GB(1) + XX)))
G = GNUM/(XX*GDEN)
IF(IFLAG.EQ.0) GO TO 28
FN = F*SIN(X) - G*COS(X)
RETURN
1 XX = X*X
CH = XX*(F2 + XX*(F4 + XX*(F6 + XX*(F8 + XX*(F10))))
GAMMA = .577215664
FN = GAMMA + LOGF(X) + CH
RETURN
ENTRY SI
IFLAG = 0
IF(X.LT.1.) GO TO 29
GO TO 27
28 FN = - F*COS(X) - G*SIN(X)
RETURN
29 XX = X*X
PI = 3.1415926536
SH = X*(1. + XX*(F3 + XX*(F5 + XX*(F7 + XX*(F9 + XX*(F11)))))
FN = SH - .5*PI
RETURN
ENTRY ELLIPK
HOLDA=1.38629436112 $ HOLDR = 0.5
DO 2 J=1,4
A(J) = AK(J)
2 R(J) = RK(J)
GO TO 4
ENTRY ELLIPF
HOLDA = 1.0
HOLDR = 0.0
DO 3 J=1,4
A(J) = AE(J)

```

ROGERS AND ZALESAK

```
3 R(J) = RE(J)
4 Q = QM = 1. - X
  FACT = LOGF(1./Q)
  DO 11 J=1,4
    HOLDA = HOLDA + A(J)*Q
    HOLDB = HOLDB + B(J)*Q
11 Q = Q*QM
  FN = HOLDA + HOLDB*FACT
  END
```

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RIN= 0.090 ROUT= 0.110 H= 0.100 FK= 10.000 NQD1= 32 IMAX= 10 JMAX= 20

THE IMPEDANCE COEFFICIENTS FOR THIS RING TRANSDUCER IN UNITS OF $\rho c A$ ARE

Z1 =	3.79389+000	7.62228-001
Z2 =	1.91188-002	2.36734-003
Z3 =	8.14580-002	2.62133-001
Z1P =	3.04974-002	-9.18393-002
Z2P =	3.36869-001	-1.52465+000
Z3P =	5.36516-001	-1.29543-001

TIME LEFT 151.173 SECONDS

ROGERS AND ZALESAK

RING TRANSDUCER

RIN= 0.090 ROUT= 0.110 H= 0.100 FK= 10.000 NQDI= 32 IMAX= 10 JMAX= 20

NUM	SP REAL	SP IMAGINARY	VEL REAL	VEL IMAGINARY
1	-1.68964067+007	-7.28632251+006	-1.03000000+000	0.00000000+000
2	-1.67240098+007	-7.18043163+006	-1.03000000+000	0.00000000+000
3	-1.63799449+007	-6.96905714+006	-1.03000000+000	0.00000000+000
4	-1.58654426+007	-6.65287192+006	-1.03000000+000	0.00000000+000
5	-1.51816601+007	-6.23243279+006	-1.03000000+000	0.00000000+000
6	-1.43285294+007	-5.70743504+006	-1.03000000+000	0.00000000+000
7	-1.33023691+007	-5.07518842+006	-1.03000000+000	0.00000000+000
8	-1.20902782+007	-4.32697361+006	-1.03000000+000	0.00000000+000
9	-1.06536050+007	-3.43745457+006	-1.03000000+000	0.00000000+000
10	-8.84946073+006	-2.31425335+006	-1.03000000+000	0.00000000+000
1	-5.94569027+006	-5.05481738+005	-3.00000000-001	0.00000000+000
2	-5.57339113+006	-2.99199128+005	-3.00000000-001	0.00000000+000
13	-5.21429150+006	-9.86962798+004	-3.00000000-001	0.00000000+000
14	-4.87234888+006	9.32210914+004	-3.00000000-001	0.00000000+000
15	-4.54734618+006	2.76379070+005	-3.00000000-001	0.00000000+000
16	-4.23676910+006	4.51865036+005	-3.00000000-001	0.00000000+000
17	-3.93760985+006	6.21313704+005	-3.00000000-001	0.00000000+000
18	-3.64749427+006	7.86480965+005	-3.00000000-001	0.00000000+000
19	-3.36517701+006	9.48761039+005	-3.00000000-001	0.00000000+000
20	-3.09074592+006	1.10889949+006	-3.00000000-001	0.00000000+000
21	-1.71773374+006	2.07624234+006	9.70000000-001	0.00000000+000
22	-1.09790283+006	2.53582577+006	9.70000000-001	0.00000000+000
23	-6.93093461+005	2.84441575+006	9.70000000-001	0.00000000+000
24	-3.93304059+005	3.07748136+006	9.70000000-001	0.00000000+000
25	-1.62509632+005	3.25955936+006	9.70000000-001	0.00000000+000
26	1.61794302+004	3.40210606+006	9.70000000-001	0.00000000+000
27	1.51970059+005	3.51133565+006	9.70000000-001	0.00000000+000
28	2.50266259+005	3.59088113+006	9.70000000-001	0.00000000+000
29	3.14287642+005	3.64290592+006	9.70000000-001	0.00000000+000
30	3.45877678+005	3.66863508+006	9.70000000-001	0.00000000+000
31	3.45877678+005	3.66863508+006	9.70000000-001	0.00000000+000
32	3.14287642+005	3.64290592+006	9.70000000-001	0.00000000+000
33	2.50266259+005	3.59088113+006	9.70000000-001	0.00000000+000
34	1.51970059+005	3.51133565+006	9.70000000-001	0.00000000+000
35	1.61794302+004	3.40210606+006	9.70000000-001	0.00000000+000
36	-1.62509632+005	3.25955936+006	9.70000000-001	0.00000000+000
37	-3.93304059+005	3.07748136+006	9.70000000-001	0.00000000+000
38	-6.93093461+005	2.84441575+006	9.70000000-001	0.00000000+000
39	-1.09790283+006	2.53582577+006	9.70000000-001	0.00000000+000
40	-1.71773374+006	2.07624234+006	9.70000000-001	0.00000000+000
41	-3.09074592+006	1.10889949+006	-3.00000000-001	0.00000000+000
42	-3.36517701+006	9.48761039+005	-3.00000000-001	0.00000000+000
43	-3.64749427+006	7.86480965+005	-3.00000000-001	0.00000000+000
44	-3.93760985+006	6.21313704+005	-3.00000000-001	0.00000000+000
45	-4.23676910+006	4.51865036+005	-3.00000000-001	0.00000000+000
46	-4.54734618+006	2.76379070+005	-3.00000000-001	0.00000000+000
47	-4.87234888+006	9.32210914+004	-3.00000000-001	0.00000000+000
48	-5.21429150+006	-9.86962798+004	-3.00000000-001	0.00000000+000
49	-5.57339113+006	-2.99199128+005	-3.00000000-001	0.00000000+000
50	-5.94569027+006	-5.05481738+005	-3.00000000-001	0.00000000+000
51	-8.84946073+006	-2.31425335+006	-1.03000000+000	0.00000000+000
52	-1.06536050+007	-3.43745457+006	-1.03000000+000	0.00000000+000
53	-1.20902782+007	-4.32697361+006	-1.03000000+000	0.00000000+000
54	-1.33023691+007	-5.07518842+006	-1.03000000+000	0.00000000+000
55	-1.43285294+007	-5.70743504+006	-1.03000000+000	0.00000000+000
56	-1.51816601+007	-6.23243279+006	-1.03000000+000	0.00000000+000
57	-1.58654426+007	-6.65287192+006	-1.03000000+000	0.00000000+000
58	-1.63799449+007	-6.96905714+006	-1.03000000+000	0.00000000+000
59	-1.67240098+007	-7.18043163+006	-1.03000000+000	0.00000000+000
60	-1.68964067+007	-7.28632251+006	-1.03000000+000	0.00000000+000

THE COMPLEX RADIATION IMPEDANCE IN UNITS OF RHU C A IS (3.92364973+000 2.56547390+000)
TIME LEFT 147.382 SECONDS

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FARFIELD PATTERN AT INFINITY

ANGLE	DB	MAGNITUDE
0.000	0.000	6.192189+005
5.000	-0.074	6.139883+005
10.000	-0.296	5.984582+005
15.000	-0.672	5.731086+005
20.000	-1.210	5.387252+005
25.000	-1.921	4.963764+005
30.000	-2.823	4.473831+005
35.000	-3.943	3.932799+005
40.000	-5.316	3.357707+005
45.000	-6.997	2.766838+005
50.000	-9.070	2.174354+005
55.000	-11.672	1.615306+005
60.000	-15.033	1.097012+005
65.000	-19.489	6.567744+004
70.000	-24.285	3.780840+004
75.000	-23.670	4.058214+004
80.000	-20.699	5.713481+004
85.000	-18.968	6.973370+004
90.000	-18.430	7.419349+004

TIME LEFT 146.454 SECONDS