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COMPUTATIONAL ACOUSTICS

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LONG TERM GOALS

Development of new, efficient, 3-dimensional, mathematical and computer models useful for solving acoustic propagation and all-direction scattering problems covering long-range, rough-bottom, and fluid/elastic interfaces in complex shallow water, as well as intermediate water depth, environments.

OBJECTIVES

For FY97, we continued to collaborative efforts with university scholars in making valuable contributions for Navy applications in the following ongoing research areas: (1) 3-dimensional coupled fluid-elastic modeling, (2) scientific technical activities involving: (a) publications, (b) delivering invited and contributed papers to international scientific conferences as a means of reporting our progress, disseminating information, and attracting more interest in the field, (c) fulfilling the role of editor-in-chief of the J. Computational Acoustics, and (3) remain current on other state-of-the-art technical developments related to our research topics that may stimulate our research topics.

APPROACH

Develop practical propagation models for solving Navy problems as the first step. Incorporate additional useful capabilities to our existing models. Create new numerical mathematical schemes along with the application of theoretical and applied mathematics required for the development of propagation models. Models are developed to handle all complex ocean environmental conditions by means of scientific computing (moderate to large-scale computations).

WORK COMPLETED

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