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AUTHORITY

ATD ltr 2 Dec 1965

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S/526/62/000/024/009/013
D234/D308

AUTHORS: Milovych, S.V. and Nazarchuk, M.M.

TITLE: Character of gas flow in a channel near crisis

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut teploenerhetyky. Zbirnyk prats'. no. 24, 1962. Teploobmin ta hidrodynamika, 98-103

TEXT: The authors consider a turbulent flow of viscous gas in a plane parallel channel of thickness 2 h, assuming Pr = 1, and absence of heat exchange. The thickness of the viscous sublayer is regarded as small in comparison with h. The equation relating the dimensionless velocity U on the channel axis with the form parameter n at the instant of crisis is

$$U^4 - \frac{2k}{k+1}(2n+1)U^2 + \frac{k-1}{k+1}(2n+1)(4n^2+2n+1) = 0. \quad (18)$$

It is concluded that different pairs of values (U,n) correspond to

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different critical lengths of the channel. If U at the inlet is equal to the velocity of sound the crisis occurs at the inlet. There are 2 figures.

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