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CONTENTS

Summary: Forced convection laminar boundary layer flow ofa viscous incompressible and electrically conducting fluid from a semi-infinite flat plate, when the plate temperature oscillates in time about a constant non-zero mean while the free stream is isothermal, has been studied. An approximate integral method is used to integrate the Navier-Stokes and energy equations. Separate solutions for low and high frequency ranges are obtained. It is found that in the low frequency range the oscillating component of the temperature in theboundary layer always lags behind the plate temperature oscillations while the rate of heat transfer has a phase lead. In the high frequency range the temperature in the boundary layer is ofthe 'shear-wave' type.

Abstract: The transverse vibrationsof a box type beam (i.e. a rectangular beam hollow in the middle) are considered. The secondary effects of shear forces and therotatory inertia are retained and the sides and the top and bottom of the beam are taken to bend through different angles due to shear. The equations of motion are derived by applying Hamilton principle. These equations are solved for the case of a cantilever and the frequencies obtained for various modes are compared with those for Timoshenko equation.

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