

UNSTEADY MHD FORCED FLOW OVER A WEDGE WITH LOCALIZED WALL HEATING/COOLING AND SUCTION/INJECTION

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Abstract

In this paper, the effects of localized wall heating/cooling and suction/injection on the unsteady, laminar boundary layer forced flow past a wedge with an applied magnetic field have been investigated. The system of non linear partial differential equations governing the semi similar flow has been solved numerically using an implicit finite difference scheme along with the quasilinearization technique. It is found that unsteadiness in the flow, wall heating/cooling and suction/injection have significant effects on the flow pattern and temperature field as well as on the local skin friction coefficient and Nusselt number. The results of the present investigation reveal some interesting features of the flow and heat transfer phenomena related to the control of the laminar boundary layer on a wedge.

Key Words : *Unsteady wedge flow, Transverse magnetic field, Localized wall heating(cooling)/suction (injection), Skin friction, Heat transfer.*

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