

1) HYDROMAGNETIC FREE CONVECTION CURRENT EFFECTS ON BOUNDARY LAYER THICKNESS

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Abstract

In this study we discuss an unsteady free convection MHD flow past semi-infinite vertical porous plate. We have considered the flow in the presence of a strong magnetic field and therefore the electromagnetic force is very large. This brings in the phenomenon of Hall and Ion-slip currents. The effects of these two parameters together with that of viscous dissipation and radiation absorption among others on velocity, temperature and concentration profiles are presented. The profiles are presented graphically. As the partial differential equations governing this problem are highly non-linear they are solved numerically by a finite difference method. It is found that in presence of heating of the plate by free convection current the velocity boundary layer thickness decreases.

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