HEAT AND MASS TRANSFER PAST A SEMI – INFINITE VERTICAL POROUS PLATE IN MHD FLOWS IN TURBULENT BOUNDARY LAYER

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ABSTRACT

Heat and mass transfer past a semi-infinite vertical porous plate in MHD flow of unsteady free convection incompressible fluid flow in turbulent boundary layer in the presence of a variable strong magnetic field at an angle of $\theta$ to the plate and induced Hall and Ion-slip current effects will be considered. The partial differential equation governing the flow problem will be solved by finite difference approximation while the computation of skin friction, rate of heat transfer and mass transfer at the plate will be obtained by Newton’s interpolation approximation over the first five points. The effects of modified Grashof number, suction velocity, the angle of inclination, time, Hall current, Ion-Slip current, Eckert number, Schmidt number and heat source parameter on the convectively cooled or convectively heated plate restricted to turbulent boundary layer will be considered. Finally results will be presented in graphs and tables.