NUMERICAL SOLUTIONS FOR HYDROMAGNETIC FLOW ON CONTINUOUSLY MOVING HORIZONTAL SURFACE WITH UNIFORM HEAT FLUX

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Abstract

Numerical solution for hydromagnetic convective flow over a continuously moving horizontal surface with uniform suction and internal heat generation/absorption is obtained. This represents a new class of boundary layer flow at a surface of finite length. The solutions of the velocity and temperature profiles are obtained for different parameters like Prandtl number, heat source parameter (_) and Hartmann number. It is observed from the figures that the velocity decreases considerably in the presence of magnetic field, as compared to its absence. The temperature increases in the heat source and decreases in the present of heat sink.

Key Words : Hydromagnetic flow, Horizontal surface, Heat flux.