

**TRANSIENT MHD FREE CONVECTIVE FLOW AROUND AN
ISOTHERMAL SEMI-INFINITE VERTICAL PLATE WITH
TEMPERATURE GRADIENT DEPENDENT HEAT SOURCE**

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Abstract

Transient MHD free convective flow of an incompressible fluid past an isothermal vertical plate with temperature dependent heat source is studied. Implicit finite difference scheme which is unconditionally stable has been used to solve governing partial differential equations of the flow. Transient temperature and velocity profiles are plotted to show the effects of heat source and magnetic field parameters. Effects of these parameters on Local and Average skin friction, Local and Average Nusselt number are also demonstrated.

Key Words : Transient, Free convection, MHD, Heat source.