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SOLUTION OF THE MHD BOUNDARY LAYER FLOW MOVING

CONTINUOUS FLAT SURFACE USING SPLINE METHOD

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ABSTRACT

Here we solve the equation of Magneto hydrodynamic boundary layer flows past a moving continuous flat surface in the presence of transverse magnetic field. Here we check effect of magnetic field on velocity of MHD fluid. Solve the governing nonlinear equations with use their associated boundary conditions with blue method. The beauty of this method is we can solve nonlinear problem directly, without convert in linear form. Numerical solution and graphical presentation of flow problem is also given.

NOMENCLATURE

MHD   - Magneto hydrodynamics

u, v - Velocity components in X, Y directions respectively

U, W - The mainstream velocity components

ρ - Field density

ψ - Stream function

σ - Electrical conductivity

$B_y(x)$ -magnetic field strength

v_m - Magnetic viscosity

S - Magnetic field strength

η - The single independent variable

KEYWORDS: Boundary Layers, Blue Method, Linear Equations, Magnetic Field, Third Order Nonlinear Differential Equation