

Slip effects on MHD non-darcy boundary layer flow over a stretching sheet in a porous medium with radiation and ohmic dissipation

ABSTRACT

In this study, MHD boundary layer slip flow of an incompressible fluid over a stretching sheet in Darcy-Forchheimer porous medium are investigated numerically. Analysis has been carried out in the presence of thermal radiation and ohmic dissipation. Velocity and thermal slips are considered instead of no-slip conditions at the boundary. The governing boundary layer equations along with the boundary conditions are transformed into a dimensionless form by a similarity transformation and the resulting coupled ordinary differential equations are then solved by shooting method. The effects of governing parameters on the flow and thermal fields are examined. The skin friction and wall temperature gradient with effects of slip parameter are reported graphically for various parametric conditions to show interesting aspect of the numerical solution.

Keyword: Boundary layer; Heat transfer; Stretching surface; Slip parameters