**ABSTRACT**

A linear stability analysis of a viscous incompressible fluid saturated porous medium under the influence of vertical magnetic field in the presence of Hall current has been investigated. Asymptotic solutions of velocity, temperature, fluid vorticity, current density and magnetic field in terms of wave number as perturbation parameter are obtained. The influence of various non-dimensional parameters such as Hall current, Chandrasekhar number, magnetic Prandtl number, Prandtl number, Darcy number, porosity and wave number on stability characteristics of flow field are represented numerically.