

Investigation of MHD on the flow of couple stress fluid enclosing a porous sphere in a porous medium

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Abstract

The present study is related with the flow of an axisymmetric, incompressible couple stress fluid in a porous medium enclosing a porous sphere with the magnetic field. The problem is solved analytically by separation of variables method. Velocities, stream function, vorticity component, fluid pressure, couple stresses and stress tensors are obtained. Continuity of velocity, Stresses, microrotations and couple stresses are applied at the interface. Velocities, drag force, and streamline are plotted for different values of flow parameters and discussed.