عنوان مقاله:

Study of MHD Flow over Stretching Inclined Transparent Plate Using Numerical Keller-Box Method

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خلاصه مقاله:

The present paper investigates numerically the magnetohydrodynamic mixed convection flow over a nonlinear stretching inclined transparent plate embedded in a porous medium due to solar radiation. The 2-D governing equations are obtained considering the dominant effect of boundary layer and considering Boussinesq approximation and uniform porosity and also in presence of the effects of viscous dissipation and variable magnetic field. These equations are transformed by the similarity method to two coupled nonlinear ODEs and then solved using a numerical implicit method called Keller-Box. The effects of various parameters such as magnetic parameter, porosity, effective extinction coefficient of porous medium, solar radiation flux, plate inclination angle, diameter of porous medium solid particles and dimensionless Eckert, Richardson and Prandtl numbers have been studied on the dimensionless temperature and velocity profiles. The results obtained are shown in diagrams and have been discussed

کلمات کلیدی:

MHD, porous medium, solar radiation, Keller-Box method

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