

Mathematical Modelling Of MHD Unsteady Heat And Mass Transfer Of A Micropolar Fluid Past A Vertical Semi-Infinite Porous Inclined Plate And Magnetic Field With Soret And Dufour Effects

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Abstract

The present study investigates the effects of Soret and Dufour on unsteady MHD heat and mass transfer flow of a Micropolar fluid past a vertical semi-infinite porous inclined plate in presence of an inclined Magnetic field. The resulting non-linear coupled Partial Differential Equations are solved by the Trivariate Spectral Collocation Method (TSCM). The results of velocity, angular momentum, temperature and concentration profiles are presented graphically and discussed after varying the various parameters. The various engineering quantities of interest including skin friction, couple stress, rate of heat and mass transfer are numerically evaluated and discussed.

Keywords: Couple stress, heat transfer, inclined magnetic field, mass transfer, Skin friction, Unsteady.

Journal of Engineering Research and Application Vol. 9 pp 47-56(2019)

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