FINITE DIFFERENCE SCHEME FOR MHD FLOW OVER A LINEARLY STRETCHED SHEET WITH THERMAL RADIATION

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Abstract

In this paper, we consider two dimensional boundary layer ow and heat transfer of viscous incompressible fluid with thermal radiation past over a linearly stretched sheet in the presence of magnetic field. The coupled partial differential equations are reduced into ordinary differential equations by using similarity transformations. The solution of the coupled non-linear system is obtained by using implicit finite difference scheme with Thomas algorithm. The convergence, salient features of the fluid flow and heat transfer characteristics are analyzed and investigated in detail through tables and graphs.

Nomenclature

u, v	:	Velocity components along x and y- axes
v	:	Kinematic viscosity
T_0	:	Temperature at the plate
T_∞	:	Temperature for away from the plate
μ	:	Viscosity of the fluid
B_0	:	Strength of magnetic field