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## ANALYTICAL STUDY OF HEAT TRANSFER FOR MHD FLOW OF VISCOELASTIC FLUIDS OVER A STRETCHING SHEET WITH ENERGY DISSIPATION, INTERNAL HEAT SOURCE AND THERMAL RADIATION IN A POROUS MEDIUM

## V. SINGH, GEETU SINGH AND SHWETA AGARWAL

## Abstract

In this present article the solution for MHD flow and heat transfer for two types of viscoelastic flow through porous stretching sheet with internal heat source, thermal radiation and energy dissipation. The flow is caused by linear stretching of a sheet from an impermeable wall. The governing partial differential equations of momentum and energy are converted into ordinary differential equation by using a classical similarity transformation along with appropriate boundary conditions. The coupled non-linear boundary value problem has been solved by fourth order Runge-Kutta method with efficient shooting technique. Analytical solution has been given in term of hypergeometric function. In this article the effect of various physical parameters such as viscoelastic parameter, thermal radiation parameter, Prandtl number, Eckert number, magnetic number, heat source/sink parameter and porosity parameter on temperature profiles in both cases PST and PHF has been investigated with the help of graphs.

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Key Words : Porous medium, Viscoelastic fluid, Numerical solution, Thermal radiation, Magnetohydrodynamic.

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