

Abstract: MHD heat and mass transfer viscoelastic fluid flow through a vertical porous plate with Dufour and Soret effect has been studied. In this analysis, the viscoelastic fluid in the momentum equation is considered for high speed fluid flows and the level of concentration have been taken very high. The governing equations of the problem contain a system of partial differential equations. Usual nondimensional variables have been used to obtain the dimensionless momentum, energy and concentration equations. The dimensionless coupled partial differential equations are solved numerically by implicit finite difference method. The simulated results of this investigation are discussed for the different values of the well-known parameters with different time steps. Finally, the obtained numerical results are compared with previous published results and this comparison has been shown in tabular form.

Keywords: MHD, visco-elastic fluid, Dufour effect, Soret effect