

Magnetohydrodynamics newtonian fluid flow over a stretching surface

ABSTRACT

This paper describes the numerical study of magnetohydrodynamics (MHD) Newtonian fluid flow, which is subjected to the exponentially stretching sheet and affected by Soret-Dufour parameter. The governing basic equations (flow, momentum, energy and concentration equations) are converted to nonlinear ordinary differential equations (ODEs) by using non-similarity method. Subsequently, the ODE are solved numerically by bvp4c program in Matlab software. The graphs of velocity, temperature and concentration profiles are presented due to different controlling parameters, namely as magnetic field parameter and suction parameter.

Keyword: Magnetohydrodynamics; Stretching surface; Suction; Soret number; Dufour number