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EFFECTS OF DUFOUR AND SORET ON STEADY MHD MIXED CONVECTION FLOW PAST A VERTICAL POROUS FLAT PLATE WITH VARIABLE SUCTION

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Abstract

This work is focused on the Dufour (diffusion-thermo) and Soret (thermal-diffusion) effects on combined freecombined flow past a semi-infinite vertical flat plate under the influence of transversely applied magnetic field, have been studied numerically. The non-linear partial differential equations, governing the problem under consideration, have been transformed by a similarity transformation into a system of ordinary differential equations which is solved numerically by applying the Cranck-Nicolson implicit scheme. Numerical results of hydrogen-air mixture fluid for the velocity, temperature and concentration are shown graphically for various values of the parameter entering into the problem. Finally, the corresponding local skin-friction coefficient is shown in tabular form.

Keywords : MHD, Combined convection, porous medium, variable suction, Dufour effect, Soret effect

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