Analytical solution of the MHD free convective unsteady flow over a vertical plate with heat source

By Rubel Ahmed

GRIN Verlag Gmbh Apr 2015, 2015. Taschenbuch. Book Condition: Neu. 210x148x1 mm. This item is printed on demand - Print on Demand Neuware - Scientific Essay from the year 2015 in the subject Mathematics - Applied Mathematics, , language: English, abstract: The unsteady free convection and mass transfer boundary layer flow past an accelerated infinite vertical porous plate by taking into account the viscous dissipation is considered when the plate accelerates in its own plane. The dimensionless momentum, energy and concentration equation in the presence of uniform transverse magnetic field has been solved analytically by perturbation technique. The usual similar transformations are applied to the steady momentum, energy and concentration equations and we obtained a set of ordinary differential equations. Then the solutions of the problem of the ordinary differential equations are obtained by using perturbation technique. The expression for velocity field, temperature field, concentration field, skin friction, Nusselt number (Nu) and Sherwood number (Sh) has been found. The results are discussed in detailed with the help of graphs to observe the effect of different parameters. 20 pp. Englisch.

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