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EFFECT OF THERMAL RADIATION ON A THREE DIMENSIONAL FREE CONVECTIVE FLOW WITH MASS TRANSFER PAST A POROUS VERTICAL PLATE

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Abstract

The objective of the present study is to investigate the influence of radiation on a three dimensional heat and mass transfer flow of an incompressible viscous fluid along a vertical porous plate with transverse sinusoidal suction velocity distribution and uniform free stream velocity. The governing equations are solved by regular perturbation technique. The expressions for the velocity field, the wall shear stress in the direction of the main flow and the rate of heat transfer and mass transfer from the plate to the fluid are obtained. Numerical values of the velocity field and skin friction are obtained and they are demonstrate graphically. It is found that the skin friction increases with the increase of Schmidt number and radiation parameter.

Key Words : *Free convection, Heat transfer, Mass transfer, Schmidt number, Viscous, Thermal radiation.*

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