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# EFFECTS OF SLIP AND VARIABLE THERMAL CONDUCTIVITY ON THREE DIMENSIONAL MHD VISCOUS FLOW AND HEAT TRANSFER DUE TO AN AXISYMMETRIC PERMEABLE SHRINKING SHEET

**R. N. JAT[1] AND DINESH RAJOTIA[2]**
[1,2] Department of Mathematics,
University of Rajasthan, Jaipur 302004, India

**Abstract**

The present work is concerned with the effects of slip, variable thermal conductivity, viscous dissipation, Joule heating and heat source/sink on three dimensional MHD viscous flow and heat transfer of an electrically conducting fluid due to a permeable sheet which shrinks axisymmetrically in its own plane. The slip is controlled by a dimensionless slip factor, which varies from zero to infinite and the thermal conductivity is assumed to vary linearly with the temperature. The governing equations are transformed to ordinary differential equations by using suitable similarity transformations and then solved numerically on computer by standard technique. Numerical results of velocity and temperature profiles are obtained with the effects of various parameters involved such as slip, suction, permeability, magnetic, thermal conductivity variation, Prandtl number, Eckert number and heat source/sink etc. and discussed them graphically in suitable manner such that interesting aspects of the solution can be adopted.

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Key Words : *Axisymmetric shrinking sheet, Slip condition, Thermal conductivity, Magnetic effect, Viscous dissipation, Suction, Heat generation/absorption.*