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A Note on MHD Flow and Heat Transfer over a Curved Stretching Sheet by Considering Variable Thermal Conductivity

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Abstract : The mixed convective flow of MHD incompressible, steady boundary layer in heat transfer over a curved stretching sheet due to temperature dependent thermal conductivity is studied. We use curvilinear coordinate system in order to describe the governing flow equations. Finite difference solutions with central differencing have been used to solve the transform governing equations. Numerical results for the flow velocity and temperature profiles are presented as a function of the non-dimensional curvature radius. Skin friction coefficient and local Nusselt number at the surface of the curved sheet are discussed as well.

Keywords : curved stretching sheet, finite difference method, MHD, variable thermal conductivity
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