Flow and Heat Transfer of a Non-Newtonian Power-Law Fluid over a Non-Linearly Stretching Sheet with Thermal Radiation and Aligned Magnetic Field

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Abstract: In the present paper the effect of a non-linearly permeable stretching sheet on the solution profile in the presence of thermal radiation and aligned magnetic field has been investigated. A drive has been undertaken to thus highlight the effects of heat and mass transfer of a non-Newtonian power-law fluid over a stretching sheet when the equations are transformed into ordinary differential equations using similarity variables. The transformed equations have been solved numerically using the Runge-Kutta method coupled with the shooting technique. These results are presented graphically for various values of power-law index and for different parameters, viz the stretching parameter, suction parameter, Prandtl number radiation parameter etc.

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