Flow and Heat Transfer over a Shrinking Sheet: A Stability Analysis

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Abstract : The characteristics of fluid flow and heat transfer over a permeable shrinking sheet is studied. The governing partial differential equations are transformed into a set of ordinary differential equations, which are then solved numerically using MATLAB routine boundary value problem solver bvp4c. Numerical results show that dual solutions are possible for a certain range of the suction parameter. A stability analysis is performed to determine which solution is linearly stable and physically realizable.