

Series Solutions of Boundary Layer Flow of a Micropolar Fluid Near the Stagnation Point Towards a Shrinking Sheet

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An analysis has been carried out to obtain the series solution of boundary layer flow of a micropolar fluid towards a shrinking sheet. The governing equations of micropolar fluid are simplified using suitable similarity transformations and then solved by homotopy analysis method (HAM). The convergence of the HAM solutions has been obtained by using homotopy-pade approximation. The effects of various parameters such as porosity parameter R , the ratio λ and the microinertia K on the velocity and microinertia profiles as well as local skin friction coefficient are presented graphically and in tabulated form.

Key words: Micropolar Fluid; Stagnation Point; Shrinking Sheet; Boundary Layer Flow