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Homotopy analysis method for fully developed MHD micropolar fluid flow between vertical porous plates. (English) Zbl 1183.76834

Summary: In this paper, the fully developed natural convection of MHD micropolar fluid flow between two vertical porous plates is considered. The coupled system of non-linear differential equations governing the flow is solved analytically by the homotopy analysis method (HAM). The HAM contains an auxiliary parameter , which provides us with a simple way to adjust and control the convergence region and rate of convergence of the series solution. Velocity, microrotation and temperature profiles are presented for several values of the Hartmann number and the micropolar parameter.

MSC:

76M25	Other numerical methods (fluid mechanics) (MSC2010)
76W05	Magnetohydrodynamics and electrohydrodynamics
76A05	Non-Newtonian fluids

Cited in **14** Documents

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