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Effects of Hall and ion-slip currents on magneto-micropolar fluid and heat transfer over a non-isothermal stretching sheet with suction and blowing. (English) [Zbl 0996.76097](#)
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Summary: The effects of Hall and ion-slip currents on the steady flow of magneto-micropolar viscous incompressible and electrically conducting fluid are analyzed using the theory of micropolar fluids. We also consider heat transfer from a stretching sheet to a micropolar fluid. The equations derived on the assumption of small magnetic Reynolds number are solved numerically by shooting method. Expressions for velocities and temperature fields are obtained, and effects of various parameters of the problem, e.g. the magnetic parameter, Hall parameter, ion-slip parameter, mass transfer parameter and power-law exponent parameter, are discussed through graphs.

MSC:

76W05 Magnetohydrodynamics and electrohydrodynamics

80A20 Heat and mass transfer, heat flow (MSC2010)

Cited in **5** Documents

Keywords:

Hall currents; suction; blowing; ion-slip currents; micropolar fluids; stretching sheet; small magnetic Reynolds number; shooting method; magnetic parameter; Hall parameter; ion-slip parameter; mass transfer parameter; power-law exponent parameter

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