A numerical solution for heat transfer past a stretching sheet with ohmic dissipation and suction or injection problem using Haar wavelet quasilinearization method

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Abstract

This paper represents a numerical analysis for heat transfer of a Jeffrey fluid flow past a stretching sheet with ohmic dissipation and suction/injection. The partial differential equations are reduced into a set of convenient nonlinear ordinary differential equations with the boundary conditions. Haar wavelet quasilinearization method (HWQM) is used to solve ordinary differential equations. The effect of various related parameters on velocity and temperature profiles are computed and analyzed. Then, comparison is made between the numerical results of proposed method with existing numerical solutions found in the literature, and reasonable agreement is noted. © Published under licence by IOP Publishing Ltd.

SciVal Topic Prominence

Topic: Stretching Sheet | Stagnation Point Flow | MHD Flow

Indexed keywords

Engineering controlled terms:
- Boundary conditions
- Flow of fluids
- Heat transfer
- Nonlinear equations
- Numerical methods

Engineering uncontrolled terms:
- Injection problems
- Nonlinear ordinary differential equation
- Numerical results
- Numerical solution
- Ohmic dissipation
- Quasi-linearization methods
- Stretching sheet
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