

Lie point symmetries and similarity solutions for an electrically conducting Jeffrey fluid

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Abstract

In this work, the equations for the two-dimensional incompressible fluid flow of an electrically conducting Jeffrey fluid have been studied. Lie group analysis was performed and group invariant solutions were obtained. A boundary value problem for the translational symmetry was investigated and the results were represented graphically. The effects of Jeffrey fluid parameters λ_1 (the ratio of relaxation to retardation times) and λ_2 (retardation time) were noted.

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