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Aligned magnetic field of two-phase mixed convection flow in dusty Casson fluid over a stretching sheet with Newtonian heating (Conference Paper)

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Abstract

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The effect of aligned magnetic field is numerically investigated for mixed convection flow of dusty Casson fluid over a stretching sheet. The governing equations of flow and heat transfer for the two-phase model (fluid and dust) with an appropriate thermal boundary condition which is Newtonian heating (NH) is presented. The similarity transformation is employed to transform the nonlinear governing equations for each phase into the ordinary differential equations which then solved numerically using Runge-Kutta Fehlberg (RKF45) method. Numerical solutions obtained for velocity and temperature distributions are illustrated through graph by varying several physical parameters. It is observed that the fluid velocity decreases with an increase in aligned magnetic field and particle-fluid interaction parameter. ©

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