



Natural convection from a vertical plate embedded in a stratified medium with uniform heat source

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ABSTRACT

Natural convection flow from an isothermal vertical plate with uniform heat source embedded in a stratified medium has been discussed in this paper. The resulting momentum and energy equations of boundary layer approximation are then made non-similar by introducing the usual non-similarity transformations. Numerical solutions of these equations are obtained by an implicit finite difference method for a wide range of the stratification parameter, X . The solutions are also obtained for different values of pertinent parameters, namely, the Prandtl number, Pr and the heat generation or absorption parameter, λ and are expressed in terms of the local skin-friction and local heat transfer, which are shown as graphical form. Effect of heat generation or absorption on the streamlines and isotherms are also shown graphically for different values of λ .

Keywords: Natural convection; Stratified media; Heat source; Heat Transfer; Vertical plate; Boundary layer flow.

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