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Analytical solution of mass transfer effects on unsteady flow past an accelerated vertical porous plate with suction

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Abstract

This paper discussed the analytical solution of unsteady free convection and mass transfer flow past an accelerated infinite vertical porous flat plate with suction, heat generation and chemical species

when the plate accelerates in its own plane. The governing equations are solved analytically using perturbation technique. The flow occurrence is described with the help of flow parameters such as porosity parameter (α), Grashof numbers (Grt, Grc), Hartmann's number (M), heat generation/absorption (β) and reaction parameter (γ). The effects of various parameters are discussed on flow variables and presented by graphs. A parametric study of all parameters involved was considered, and a representative set of results showing the effects of the control parameters were illustrated.

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