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Diffusion of chemically reactive species of a Maxwell fluid due to an unsteady stretching sheet with slip effect
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Abstract
The influence of a first order slip boundary condition on the diffusion of chemically reactive species in an unsteady MHD boundary-layer flow of a non-Newtonian Maxwell fluid over a vertical permeable linearly stretching or shrinking sheet is considered. The whole analysis is performed taking the first order chemical reaction and linearly varying wall concentration. Choosing appropriate similarity variables, the governing equations of the problem are transformed into a set of non-linear coupled self-similar equations, which are then solved numerically by the shooting technique. A comparison with previously published results is performed for certain cases and the results are found to be in excellent agreement. The flow features and mass transfer characteristics for different values of the governing parameters are graphically presented and discussed in detail. © 2017 Society of Thermal Engineers of Serbia.

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