

Dual solutions of stagnation point flow and heat transfer of Maxwell fluid over a permeable stretching/shrinking sheet in the presence of nanoparticles

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ABSTRACT

Numerical investigation for stagnation point flow and heat transfer of Maxwell fluid over a stretching/shrinking sheet in the presence of nanoparticles has been performed. A similarity transformation has been used to transform the governing partial differential equations to a system of nonlinear ordinary differential equations. The transformed equations are solved numerically using the built in `bvp4c` function in Matlab. Graphical results are plotted for the local Nusselt number and the local Sherwood number for various values of the emerging parameters. Final conclusion has been drawn on the basis of both numerical and graphical results. Dual solutions exist and the first solution is found to be stable.

KEYWORDS

Maxwell fluid; Nanoparticles; Differential equations; Emerging parameters

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