Stagnation point flow toward a stretching/shrinking sheet with a convective surface boundary condition

ABSTRACT

The steady two-dimensional stagnation point flow toward a stretching/shrinking sheet with the bottom surface of the sheet heated by convection from a hot fluid is considered. The governing partial differential equations are transformed into ordinary differential equations, before being solved numerically. Results for the skin friction coefficient and the local Nusselt number as well as the temperature profiles are presented for different values of the governing parameters. Effects of the governing parameters on the heat transfer characteristics are thoroughly examined. Different from a stretching sheet, it is found that the solutions for a shrinking sheet are non-unique.