

Dual solutions on thermosolutal marangoni forced convection boundary layer with suction and injection.

ABSTRACT

This paper considers the extended problem of the thermosolutal Marangoni forced convection boundary layer by Pop et al. (2001) when the wall is permeable, namely, there is a suction or injection effect. The governing system of partial differential equations is transformed into a system of ordinary differential equations, and the transformed equations are solved numerically using the shooting method. The effects of suction or injection parameter on the velocity, temperature, and concentration profiles are illustrated and presented in tables and figures. It is shown that dual solutions exist for the similarity parameter less than 0.5.

Keyword: Marangoni convection; Boundary layer; Suction; Injection.