Radiation effects on the thermal boundary layer flow over a moving plate with convective boundary condition.

ABSTRACT

The steady laminar boundary layer flow over a moving plate in a moving fluid with convective surface boundary condition and in the presence of thermal radiation is investigated in this paper. Under certain conditions, the present problem reduces to the classical Blasius and Sakiadis problems. The effects of radiation and convective parameters on the thermal field are thoroughly examined and discussed. Dual solutions are found to exist when the plate and the fluid move in the opposite directions.

Keyword: Boundary layer; Thermal radiation; Convective boundary condition; Dual solutions; Mechanics of fluid.