

## Power-law fluid flow on a moving wall

### ABSTRACT

The steady boundary-layer flow of a non-Newtonian fluid, represented by a power-law model, over a moving flat plate in a moving fluid is studied. The transformed boundary-layer equation is solved numerically for some values of the power-law index  $n$  and velocity ratio parameter  $\beta$ . The effects of these parameters on the skin friction coefficient are analyzed and discussed. It is found that dual solutions exist when the plate and the fluid move in the opposite directions, near the region of separation. It is also found that the drag force is reduced for dilatant fluids compared to pseudo-plastic fluids.

**Keyword:** Boundary-layer; Dual solutions; Moving plate; Non-Newtonian fluid