Flows induced by power-law stretching surface motion modulated by arbitrary transverse surface shear

PATRICK WEIDMAN, University of Colorado — Boundary-layer solutions for the flow induced by power-law stretching of a plate are obtained for two generalizations that include arbitrary transverse plate shearing. In one extension the power-law motion is a product of the arbitrary transverse shearing motion. In the other extension the streamwise coordinate is added to the transverse shearing motion and together are raised to the power of stretching. In both cases the original boundary-value problem of Banks is obtained, irrespective of the arbitrary transverse shearing motion.

Patrick Weidman
University of Colorado

Date submitted: 29 Jul 2016