

SIMILARITY SOLUTIONS FOR THREE – DIMENSIONAL BOUNDARY LAYER SMALL-CROSS FLOW OF POWER-LAW FLUIDS

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Abstract

An analysis of possibility of finding similarity solutions to the three-dimensional incompressible, boundary layer equations for power-law fluids has been discussed in the literature. In the present paper a similarity analysis is made for three-dimensional incompressible, laminar boundary layer small-cross flow of non-Newtonian fluids. Both steady and unsteady flows are investigated by assuming small cross-flow; the cross flow component may be generalized.

Key Words: Similarity, small-crass flow, power-law, non-Newtonian fluid, Boundary Layer, stream function, streamlines, free parameter method.

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