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Investigation of a Laminar Boundary Layer on a Horizontal Continuously Moving Plane Surface in the Presence of a Cocurrent Flow

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Abstract

On the basis of the stationary laminar boundary layer equations, an analysis of the external flow effect on the characteristics of the boundary layer of a continuously moving flat plate is carried out. Numerical and approximate analytical solutions of the problem have been obtained for different values of the parameter ε, which characterizes the ratio of the velocities of the moving plate and cocurrent flow. Correlation dependences have been constructed for determining the boundary-layer thickness and flow shear on the body surface.

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