

Prandtl's Boundary layer equations

$$x\text{-mom: } \rho u \frac{\partial u}{\partial x} + \rho v \frac{\partial u}{\partial y} = \rho_e u_e \frac{du_e}{dx} + \mu \frac{\partial^2 u}{\partial y^2}$$

$$y\text{-mom: } \frac{\partial p}{\partial y} = 0 \quad \Rightarrow \quad p = p(x) = p_e(x)$$

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