Drag force in wind tunnels: a new method

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Abstract

A rigid object of general shape is fixed inside a wind tunnel. The drag force exerted on it by the wind is determined by a new method based on simple basic Physics concepts, provided one has a solver, any solver, for the corresponding dynamic Navier-Stokes equation which determines the wind velocity field around the object. The method is completely general, but here we apply it to the traditional problem of a long cylinder perpendicular to the wind.

Keywords: Drag force, Fluid dynamics, Navier-Stokes equation.

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