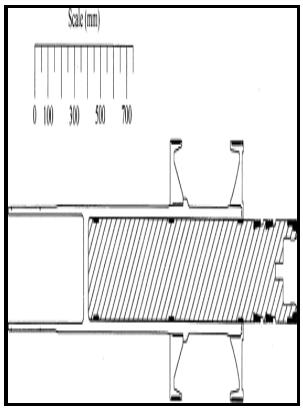
Gas flow past slender bodies

U.S. Naval Ordnance Laboratory - Calculation of three



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The primary of Stokes flow is the Stokeslet, which is associated with a singular point force embedded in a Stokes flow. Viscosity cannot be neglected near solid boundaries because the generates a thin region of large strain rate, the , in which effects dominate and which thus generates. Because the total flow conditions are defined by bringing the fluid to rest, there is no need to distinguish between total entropy and static entropy as they are always equal by definition.

CiteSeerX — 7s 6;d NETSupersonic Flow Past Slender Bodies of Elliptic Cross

RANS combined with provides a model of the effects of the turbulent flow. But at some distance form the body this velocity gradient flattens out and the velocity becomes constant in the flow normal direction.

SUPERSONIC FLOW PAST SLENDER BODIES OF REVOLUTION THE SLOPE OF WHOSE MERIDIAN SECTION IS DISCONTINUOUS

For the Prandtl numbers considered, it turns out that the same heat flux induces a lower surface temperature on a cylinder than on a flat plate. Such a modelling mainly provides the additional momentum transfer by the , although the turbulence also enhances the and. Reversal is not perfect because some diffusion of dye occurs.

Axisymmetric free convection boundary

Mass flow into the system is accounted as positive, and since the normal vector to the surface is opposite the sense of flow into the system the term is negated.

SUPERSONIC FLOW PAST SLENDER POINTED BODIES†

This idea can work fairly well when the Reynolds number is high. The flow in the inviscid core is irrotational.

Occurrence of Irrotational Flows

In such cases, inertial forces are sometimes neglected; this flow regime is called.

[PDF] Note on the Time Required for the Achievement of Steady Flow Past a Slender Body in a Hypersonic Shock Tunnel

The closed-form for the generalized unsteady Stokes and associated with arbitrary time-dependent translational and rotational motions have been derived for the Newtonian and micropolar fluids. Before the twentieth century, hydrodynamics was synonymous with fluid dynamics. In addition to the above, fluids are assumed to obey the.

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