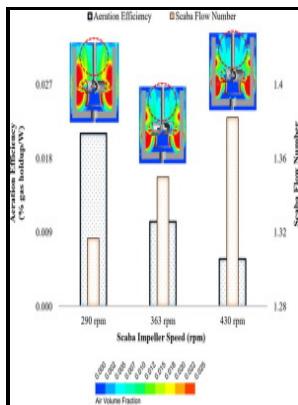


Velocity field in the laminar boundary layer induced by a disc rotating in rheologically complex fluids.

University of Salford - Laminar Boundary Layer Near the Rotating End Wall of a Confined Vortex



Description: -

- Velocity field in the laminar boundary layer induced by a disc rotating in rheologically complex fluids.

- D24172/78 Velocity field in the laminar boundary layer induced by a disc rotating in rheologically complex fluids.

Notes: PhD thesis, Chemical Engineering.

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Why Rolls are Prevalent in the Hurricane Boundary Layer in: Journal of the Atmospheric Sciences Volume 62 Issue 8 (2005)

These observations also validate Reynolds number dependence of the structure of turbulent jet observed by Liepmann and Gharib 1992. One exemplary embodiment of a vectored thrust generator is to utilize reversible propellers and to have half of the propellers generating positive thrust and the other half generating lower positive or even negative thrust through reverse spinning of the propeller shafts. They have also provided unique datasets for the validation of analytical models and CFD models, such as RANS and LES models.

Wind

Сравнение с более ранними исследованиями, основанными на одночленном представлении профиля скорости, устанавливает диапазон справедливости этих исследований. Within a short distance downstream, ring vortices formed and these ring vortices grow in size with downstream distance.

Characterization of Mixing in a Simple Paddle Mixer Using Experimentally Derived Velocity Fields

A multi-propeller system conceptually similar to that depicted in FIG. If a sufficient number of micro-propulsion means 53 are employed, it is possible to reduce the boundary layer thickness so that a laminar flow can be maintained throughout the surface area of the airship body 41. The velocity vector can be plotted for a horizontal plane through the rotating fluid.

Laminar convection to rotating cones and disks in non

Riblets are also relatively insensitive to an adverse Bernoulli pressure gradient. Vectors show the overturning roll circulation in d.

Wind

We develop a theory for roll formation and maintenance that correctly predicts the detailed observations in. Since the velocity profile of the boundary layer varies from zero at the surface of the airship body to the free streaming velocity at the flow boundary, the backward traveling wave must likewise have a wavelength which varies from zero at the surface to its maximum value at the flow boundary. Hence there is currently a wide gulf between recent observations of rolls in the hurricane BL, which show a large increase in surface stress due to rolls , and numerical models of hurricane BL flow.

ShieldSquare

In some instances, streamwise vortices show phase changes in the downstream direction. We find that the origin and nonlinear dynamics of hurricane BL rolls are the result of nonlinear instabilities of the mean BL flow.

Experimental Investigation of the Laminar Boundary Layer Flow on a Rotating Wavy Disk

In contrast, the far-wake region is less influenced by detailed features of the wind turbine. Using the well known stress-strain relationship, it follows that as long as the same blade material is used, both the single propeller system and the multi-propeller system can provide the same safety factor for identical thrusts.

Characterization of Mixing in a Simple Paddle Mixer Using Experimentally Derived Velocity Fields

Even so, recent studies suggest that hurricane rainbands are not associated with BL instabilities ;

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