

Description

Vortex Apparatus

Description:-

A transparent double walled vessel that demonstrates the phenomena of free and fixed vortices with measuring devices for calculating the water surface profile. A low-voltage, variable-speed motor rotates the vessel about its vertical axis. To produce a forced vortex, students add water to the rotating vessel until it is about half full. A forced vortex forms. The traverse probe can move both horizontally and vertically, and both axes have linear scales. Students can also measure distribution of total head by replacing the traverse probe with a Pitot tube. After a few minutes the vortex becomes constant, and students can measure the surface profile using the traverse probe. To produce a free vortex, students place a smaller, perforated transparent cylinder inside the main vessel. The surface falls rapidly towards the centre and produces an air core. Students measure the surface profile using the traverse probe. This forms an annulus into which a continuous water supply is directed. When the vessel rotates, water passes through the perforations and spirals slowly inwards to a small hole in the centre of the base of the vessel.

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