

Department of Ocean and Resources Engineering

Seminars

The Developing Progress of a CFD Code

by

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Wednesday, December 3, 2003 3:30 PM Holmes 211
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As part of the ENDEAVOR project a CFD code is in the process of being developed in order to study the hydrodynamic performance of vibrating hydrofoils, by solving the RANS (Reynolds-Averaged Navier-Stokes) equations, using an unstructured moving grid and the Finite Element Method.

Currently, a few modules have been temporarily completed, including an unstructured mesh generating part, a mesh refining part, and a set of subroutines to solve the Navier-Stokes equations in the laminar flow condition. The code was applied to simulate the Blasius flow problem and the result was compared with the analytical solution.

Hydrodynamic Response Analysis of an Advanced Marine Vehicle

by

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In this presentation, the numerical simulation of the hydrodynamic response of HDV100, an advanced marine vehicle, will be discussed. The vehicle is freely floating at the water surface and responds to regular incidence waves. The numerical simulation is done with HYDRAN, which employs linear potential theory, and the Green function method in the hydroelastic response analysis of ocean structures. Different meshing schemes are applied to the wetted surface of the vehicle. Comparison of simulation results for different meshing schemes shows the effect of panel size on the results.