



Navatek Ltd.

Marine Hydrodynamics

USA

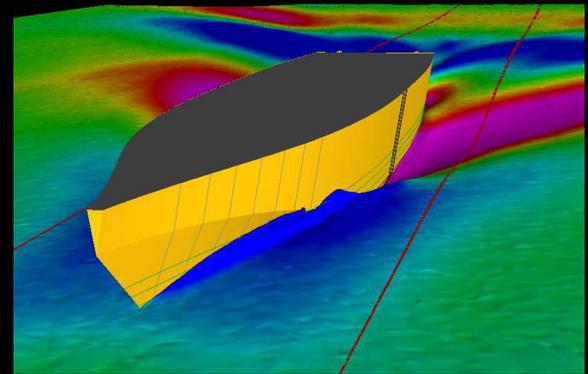
www.navatekltd.com



ANSYS® CFX®

Overview

Since its founding in 1979, Navatek (www.navatekltd.com) has been a leader in researching, developing and deploying innovative, advanced ship hull designs and associated technologies for both military and commercial use. The company, based in Honolulu, holds multiple U.S. patents relating to its underwater lifting body hull technology and is also known for its work in CFD hull optimization, drag reduction and integrated propulsion systems. Navatek's technology prototypes have demonstrated benefits including: better sea kindliness, increased range and payload, reduce power requirements, higher seaway speeds, and reduced wake wash.



Testimonial

"We are very happy with the ANSYS CFX results in all areas including forces and free surface predictions.

ANSYS CFX has performed as advertised and aided us in our design with precise appendage placement based on free surface and flow analysis."

Troy Keipper
Naval Architect



Challenge

Scale model testing is time consuming, expensive, and can be unreliable due to scaling effects.

The physics of the processes involved are complex, involving transient, transitionally turbulent, multiphase flow with a free surface.

Solution

ANSYS CFX offers reliable multiphase flow models which allow prediction of free surface shape, forces and effects due to cavitation.

Simulation results have been validated against towing-tank experiments and have been found to show excellent agreement.

CFX-Mesh allows for highly-automated, rapid creation of high-quality meshes with an inflation layer that ensures excellent near-wall resolution.

Benefits

CFD simulation allows the investigation of more design alternatives, while reducing the need for expensive towing tank tests.

ANSYS CFX allows for rapid completion of what-if scenarios providing valuable insight into design variations such as appendage placement.

The end result is hulls which perform better in all key areas.