FD-WaveLoad

Frequency-Domain Hydrodynamic Analysis for Single and Multiple Ships in Waves

DESCRIPTION:

Martec has developed the FD-WaveLoad software tool for frequency-domain hydrodynamic analysis for ships and offshore structures. FD-WaveLoad can accurately predict the motion, hull pressure distributions, and sea loads on these structures. Highly accurate and reliable, FD-WaveLoad has been proven through extensive numerical comparison with results from other software and experimental data. FD-WaveLoad is a panel-method code based on the three-dimensional Green function in the frequency-domain. FD-Waveload features include:

- Perform hydrodynamic analysis in the frequency domain
- Determine ship or platform motion in all six degrees of freedom in regular and irregular waves
- Analyze hydrodynamic pressure distributions on ship hulls and offshore platforms
- Compute sea loads including shear forces, bending and torsion moments on any section
- Compute second-order drift forces
- Model mono-hull or multi-hull ships (such as catamarans and trimarans)
- Perform multiple-body hydrodynamic interaction analysis
- Water depth can be varied (shallow to infinite depth)
- Consider the effect of mooring lines
- Ability to review results data, such as RAO's, added mass, damping and wave exciting forces
- Import complete or components models from Trident FEA
- Transfer FD-WaveLoad results directly into Trident FEA for further advanced structural analysis
- Display results as 2D or 3D contour plots
- Real-time animation of pressure distributions and actual ship or platform motions

FD-WaveLoad has the unique capability to perform multiple-body hydrodynamic interaction analysis with forward speed. This feature allows for the analysis of hydrodynamic interaction of ships advancing in waves during replenishment or other operations.