

Ship hull vibration studies

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ABSTRACT

A module, written in FORTRAN, to determine the global vibrations of the ship hull was made. The module can be used in the optimizing process, by taking into account the added mass and without these masses. The added masses are determined based on the analytical-experimental methods. The calculus was done so for vibrations in air and for vibration in water. The results were compared with the ones obtained by modeling with 3D shells using licensed soft COSMOS/M. The ship hull was divided into 20 hull beam elements, having the same length. The first 3 natural modal vibrations for vertical and horizontal bending and first natural mode for torsion are requested. The results obtained with the soft COSMOS/M and module VIBHULL are presented so for hull in air and in water. The results obtained with this module were compared with the ones obtained with a special soft. These results are good enough for the preliminary stage of the initial ship design.

Keywords: vibration of flexible systems, finite elements, FORTRAN, marine structures

1. References

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