Parametric studies on the vibrations of ship structure panels

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ABSTRACT

A methodology, using COSMOS/M licensed soft, to determine the natural frequencies of the ship hull panels, used for optimizing loop was performed. Sensitivity analysis to determine polynomial functions for frequency variation function of panel parameters was performed. Certain typical naval panels (longitudinally framing) are analyzed

Keywords: finite elements, free vibrations, structure optimization

References

1. ASMUSSEN, I., MENZEL, W., MUMM, H., *Ship Vibration*, Germanischer Lloyd, 2001.

2. **INTERNATIONAL STANDARD ISO 6954**, *Mechanical vibration – Guidelines for the measurements, reporting and evaluation of vibration with regard to habitability on passenger and merchant ships*, Edition 200.

3. **INTERNATIONAL STANDARD ISO 2631-2**, Mechanical vibration and shock – Evaluation of human exposure to whole-body vibration, Part 2: Continuous and shock induced vibration in buildings (1-80 Hz), Edition 1989.

4. **BLEVINS, R.**, Formulas for natural frequency and mode shape, Van Nostrand Reinhold Company, New York, 1979

5. **BERTRAM, V.**, *Ship Vibrations. Lecture Notes prepared for MSN and ANO*, 2004.

6. KRILOV, A.N., Vibratia sudov, Leningrad, 1936.

7. KOROTKIN, A., I., Prisoedinennie massi sudna, Leningrad, 1986.

8. CARLTON J. S., VLASIC D., *Ship vibration and noise: Some topical aspects*, 1st International Ship Noise and Vibration Conference, London, June 20-21, 2005.