Contribution ID: **165** Type: **Paper**

Surf-Riding-Broaching to and Parametric Roll vulnerability on Systematic Series D models

The development of IMO second generation intact stability criteria is based on a multilevel approach. In each level accuracy of analysis is increased and if a possible vulnerability is detected next level is applied.
A ship, depending on its characteristics and external conditions, may be considered vulnerable to one or more stability failure modes. For each stability failure mode, the study will begin applying the first level of vulnerability, and in case the ship is considered vulnerable, to one or more failure modes, the second level of vulnerability will be applied to specific mode.
This paper focuses on the first and second level vulnerability assessment of Broaching to and Parametric Roll. These two criteria are tested on the semidisplacement twin-screw round-bilge hull forms of Systematic Series D, by Kracht and Jacobsen (1992).
The operational characteristic important for the "Parametric roll" analysis are taken as "typical" values of naval ships, scaled on 90 meters ship as in original publication.
"Surf-riding/Broaching" criteria is calculated for all seven models of D-series identifying the effect of hull shape on vulnerability level.
Conclusions are discussing obtained results, commenting on the effect of hull form in the two considered stability criteria.

Primary author: Prof. BEGOVIC, Ermina (University of Naples Federico II Department of Industrial Engineering)

Co-authors: Mr CUOMO, Antonio (University of Naples Federico II Department of Industrial Engineering); Dr RINAURO, Barbara (University of Naples Federico II Department of Industrial Engineering); Prof. BOCCADAMO, Guido (University of Naples Federico II Department of Industrial Engineering)

Presenter: Dr RINAURO, Barbara (University of Naples Federico II Department of Industrial Engineering)

Track Classification: Stability, Seakeeping, Maneuverability