



Contribution ID: 38

Type: Paper

## Analysis of the Influence of Pressure Field on Accuracy for Onboard Stability Codes

*Wednesday, 20 June 2018 15:45 (15 minutes)*

Over last decades, due attention was paid to development of new stability criteria, especially probabilistic rules for damage stability, strongly influenced by the loss of many ro-ro ships in last decades of past century. In the last years, also a revision of intact stability code started and proposals have been implemented introducing stability in waves. These proposals deal with the equilibrium of a ship in regular waves to evaluate initial stability (GM) as well as righting arm curve in waves (GZ). This paper is not intended to critically review the present and proposed initial stability code, but is limited to assess how expected behaviour of intact ships in waves is affected by accuracy in computer programs for assessing actual hydrostatic properties. An updated computer code, designed for onboard application and based on 3D pressure integral, has been developed and tested in still water for a ro-ro ship. Then a comparison between static and Airy effective waves has been carried out to analyse the relevance of differences between the two correspondent pressure fields affecting the equilibrium position and hydrostatic properties. It is demonstrated that these differences appear relevant beginning from sea state 4.

**Primary authors:** Prof. TRINCAS, GIORGIO (UNIVERSITY OF TRIESTE); Mr BRAIDOTTI, Luca (University of Trieste, University of Rijeka); Prof. BUCCI, Vittorio (University of Trieste)

**Presenter:** Prof. TRINCAS, GIORGIO (UNIVERSITY OF TRIESTE)

**Session Classification:** Ship Design

**Track Classification:** Conceptual and practical ship design