



Osaka University

Graduate School of Engineering
Department of Naval Architecture & Ocean Engineering

Hydro-Seminar

by Lab. of Floating-Body Dynamics in Waves

The speaker in the 45th Hydro-Seminar is

Professor Yonghwan Kim

Department of Naval Architecture & Ocean Engineering
Seoul National University, Seoul, Korea
Specially Appointed Professor of Osaka University

Date: Wednesday, 18 July, 2018

Time: 10:30 – 12:00

Venue: S1-412 (Lecture room, 4F of S1 building)
Suita Campus, Osaka University



Stability Analysis of Rankine Panel Method

Abstract

As Rankine panel method is getting popular for practical computation for wave resistance and seakeeping analysis, we need to understand the numerical issues about the Rankine panel method. Typical numerical issues are stability and damping. Since the boundary-value problems are solved in discrete domain, the consistency between continuous and discrete dispersion relation must be confirmed. Furthermore, the numerical damping must be carefully checked. Those issues are related to the numerical dispersion in the discrete solution domains. In this seminar, the stability analysis for the Rankine panel method will be introduced. The stability analysis has been introduced by Nakos and Sclavounos (1988) for steady flow, and Kim and Yue (2003) also revisited the stability analysis for more general problems, including desingularized scheme and numerical damping. The seminar will focus on some basic concepts of numerical dispersion and damping, and example results will be shown.

The Speaker: Professor Yonghwan Kim

Professor Kim graduated Seoul National University for his bachelor and master degrees, and got a PhD degree at MIT. Currently he is a chair of the Department of Naval Architecture and Ocean Engineering at Seoul National University, and the director of Advanced Marine Engineering Center and the Lloyd's Register Foundation Center. Also he is a specially-appointed professor of Osaka University.

His primary research areas marine hydrodynamics, including motion responses of ships and offshore structures, sloshing, ship hydroelasticity, green-ship technology, and naval hydrodynamics. He is the author of more than 350 technical papers, and he is serving for several international journals as editor-in-chief, associate editor, and editorial board member.

He is a member of Korean Academy of Engineering and Fellow of RINA. Also he was chosen as the Distinguished Visiting Fellow of Royal Academy of Engineering, UK, in 2015~2016.



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