



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 23rd Hydro-Seminar is

Professor Yonghwan Kim

Department of Naval Architecture & Ocean Engineering
Seoul National University, Seoul, Korea



Date: Tuesday, 18 September, 2012

Time: 13:30 – 15:00

Venue: Library Hall of Science and Engineering Library

Suita Campus, Osaka University

http://suita.library.osaka-u.ac.jp/intro_access.html

Experimental Sloshing Analysis for Ships and Offshore Structures

Abstract

Due to structural damage inside the cargo containment system of LNG carriers, the analysis of sloshing has been one of the essential elements for the design of LNG carriers. Recently Seoul National University built a very large sloshing test facility under the support of Korean government and industry. This facility equips three excitation motion platforms which can excite the 6-DOF motions of ships or offshore platforms. After the development of experimental system, system calibration, sensor tests, and enhancement of experimental skills, sloshing experiments for practical purpose started from late 2010, and eight experimental research projects have been carried out by using this facility. In this seminar, the development of large sloshing experimental facility and its capacity will be shortly introduced. Then the seminar will concentrate on several important issues in the model-scale sloshing experiment. Particularly the following issues will be mentioned during the seminar:

- Comparative study on pressure sensors
- Statistical analysis of peak pressures
- Reduction of sloshing impact loads
- Prescreening of sloshing severity
- Heavy gas test for gas-liquid density correction
- PIV measurement of impact flows and pressure-visual synchronization

The Speaker: Professor Yonghwan Kim

Professor Kim graduated Seoul National University for his bachelor and master degrees in 1987 and 1989, respectively. After working at Daewoo Shipbuilding Co. for five years, he moved to the USA and finished a doctor course at MIT in 1998. Then he was employed as a researcher at American Bureau of Shipping (ABS) until early 2001. He returned to MIT as a research scientist in the Department of Ocean Engineering, working until the mid of 2004. He returned to Seoul National University (SNU), working as a tenured Associate Professor at the Department of Naval Architecture and Ocean Engineering (NAOE). He is one of the Lloyd's Register Educational Trust Professors and the director of two research centers: Advanced Marine Engineering Center (AMEC) and the LRET-Funded Research Center for FSI (LRETC). He is the chair of ITTC Seakeeping Committee. His primary research areas are the seakeeping problems, such as motion responses of ships and offshore structures, sloshing, ship hydroelasticity, and greenship technology.



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