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 18th Hydro-Seminar is

Professor Yonghwan Kim

Department of Naval Architecture & Ocean Engineering
Seoul National University

Date: **Tuesday, 18 January, 2011**
Time: **15:00 – 17:00**
Venue: **Library Hall of Science and Engineering Library**
        Suita Campus, Osaka University
        http://suita.library.osaka-u.ac.jp/intro_access.html

On Seakeeping Problems of Recent Commercial Ships and Offshore Structures

Abstract

Recent commercial ships and offshore structures are getting larger and faster, and this trend wakes up the demand of engineering research on some nonlinear problems related to motion dynamics. Such problems include nonlinear motion responses and hull-structural loads, dynamic stability such as parametric roll, hydroelasticity of ship structure such as springing and whipping, and violent hydrodynamic loads such as slamming, green water and sloshing. Although many problems are not very new in marine engineering field, the present technology is not in a matured status for real ship design.

In this lecture, the recent research on such problems by Marine Hydrodynamic Laboratory (MHL) in Seoul National University is introduced. During past years, MHL in Seoul National University has been devoted to research on several key issues under the support of Korean government, industry, and classification society. The most representative achievements are the development of WISH package and sloshing experimental facility. In this presentation, some of them will be introduced, particularly focusing on WISH development.

WISH (computer program for Wave-Induced nonlinear SHip motion and loads) package has been developed during last five years, and it is able to predict the linear and nonlinear floating-body motion responses and corresponding hull-girder structural loads (WISH vs.1,2,3), springing (WISH-FLEX), slamming-whipping (WISH-SLAM), and motion dynamics of cruise ships (WISH-CRUISE). This package is still expanding for maneuvering (WISH-MANEUVER), offshore platforms in arbitrary bathymetry (WISH-OFFSHORE), and so on. In this lecture, the theoretical and numerical backgrounds of WISH package are introduced with verification and validation results. Some real-ship applications are also shown.

The Speaker: Professor Yonghwan Kim

After finishing the graduate school of Seoul National University and working at Daewoo Shipbuilding Co., Ltd. for 5 years (1989-1994), he went to the USA to study at MIT (Department of Ocean Engineering) and finished the doctor course successfully under the direction of Professor Paul Sclavounos with Ph.D in 1999. Then he was employed as a researcher at American Bureau of Shipping (ABS). After working at ABS until 2001, he returned to MIT as an Assistant Professor and has worked mainly with Professor Dick Yue until 2004. Then he returned to Seoul National University as an Associate Professor at the Department of Naval Architecture and Ocean Engineering.

He has been very active in the research and academic activities, such as not only attending but also organizing international conferences, serving as a member of Seakeeping Committee of ITTC, writing a large number of papers, cooperating with various universities, companies or classification societies in the world, and as a result organizing some projects. Currently he has various titles as follows:

- Tenured Associated Professor in Seoul National University (2004~)
- Lloyd's Register Educational Trust Professor
- Director, Advanced Marine Engineering Center (AMEC)
- Director, LRET-Funded Research Center for FSI (LRETC)
- Supervisor, Marine Hydrodynamics Laboratory (MHL) in NAOE, SNU

His primary research areas are the seakeeping problems, such as motion responses of ships and offshore structures, sloshing, ship hydroelasticity. Particularly during the last five years, he is leading the WISH project in Korea and he devoted himself to the development and validation of the WISH codes for computing the wave-induced linear and nonlinear ship motions, corresponding structural loads, and other strongly nonlinear phenomena.

Map near the Venue

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