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 56th Hydro-Seminar is

Dr. Sa Young Hong

**Korea Research Institute of Ships and Ocean Engineering,
University of Science and Technology, Daejeon, Korea
Invited Professor of Osaka University**

Date:	**Monday, 18 November, 2019**
Time:	**15:00 – 17:00**
Venue:	**S1-412 (Lecture room, 4F of S1 building)**
	Suita Campus, Osaka University

Part-1
Coupled Dynamics Analysis of Floating Structures for Marine Operations

Abstract

Floating offshore platforms can be idealized as a coupled mass-spring-damper system. For example, the floater corresponds to mass, mooring system and hydrostatic restoring forces correspond to spring, and hydrodynamics viscous forces and radiation wave forces correspond to damping. If we consider more complicated situations such as loading and off-loading operation between LNG FPSO and LNGC, TLP-tender semi-submersible system, marine installation operations in which crane operations and deck mating operations, the idealized mass-spring-damper system becomes more complicated coupled system in which coupling effects due to presence of multiple floaters, cranes, additional masses and springs are included. In the present study, typical examples of marine coupled dynamics problems are introduced both in numerical and experimental approaches conducted in KRISO Ocean Engineering Basin.

Part-2
Applications of CFD to Offshore Hydrodynamics Problems: Impact loads & its validation

Abstract

Thanks to recent development of CFD(Computational Fluid Dynamics) capability rapidly both in HW and SW, application of CFD to real offshore engineering problem is increasing. In some cases, CFD already replaces model tests in engineering purposes because CFD has no scale effect unlike model tests if CFD is implemented in a right way. In practice, however, there are still many barriers for most of students and engineers to be fluent at CFD because of insufficient knowledge sharing of using CFD. CFD is very much analogous to EFD(Experimental Fluid Dynamics). So establishing reproducible CFD practice and validation of CFD results are both important in application of CFD in offshore hydrodynamics. In the present lecture, a case study of CFD practice and validation in impact loads is introduced, and limitation and expandability of CFD will be discussed.

The Speaker: Dr. Sa Young Hong

Dr. Sa Young HONG studied Naval Architecture and Ocean Engineering at Seoul National University, he got his BS (1983), MS (1985), and PhD (1994) in the same University. He started his career as a researcher at KRISO (Korea Research Institute of Ships and Ocean Engineering) since 1985. He served as Head of Ocean Engineering Research Division, Vice President of KRISO. He also served as the President of Korean Society of Ocean Engineers (2014-2015), member of ITTC Ocean Engineering Committee (2003-2008), adjunct Professor of KAIST (2011-2015), and Adjunct Professor of Chungnam National University (2012-2015). He also was visiting scholar at Texas A&M University (1998-1999), visiting scholar at ABS (American Bureau of Shipping, 2008-2009). Dr. Sa Young Hong is now the President of ISOPE (International Society of Offshore and Polar Engineers).

Dr. Sa Young Hong received the following awards:

ISOPE Best Paper Award (2008, 2019) (Co-recipient)
ISOPE PACOMS Award (2010, 2018)
KSOE Academic Award (2010), Korean Society of Ocean Engineers
ISOPE C.H. Kim Award (2013)
ISOPE Best Session Organizer Award (2014)
SNAK Best Paper Award (2015), Society of Naval Architect of Korea
The Order of Industrial Service Merit (2016), Korea Government
ISOPE Award (2016)

Main research work he has done so far:
- Floating body dynamics: HOBEM, FEM, multi-body interaction, coupled analysis with sloshing, NWT
- Mooring & DP system: coupled dynamics with floating bodies
- Marine Operations: Transportation and Installation
- VLFS design & analysis: hydroelasticity, multi-body hydroelasticity, time-domain analysis, bathymetry effects, coupled analysis with floating breakwaters, etc.
- Renewable energy: Wave energy (OWC type, floating hinge-type), OTEC, floating solar power, etc.

You can see the information on the Hydro-Seminar at the following URL:
http://www.naoe.eng.osaka-u.ac.jp/kashi/seminar.html

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