

June 21–26

---

Osaka, Japan

---

[www.isopec.org](http://www.isopec.org)

The Nineteenth (2009) International  
**Offshore (Ocean) and Polar  
Engineering Conference**

AND

**HYDRODYNAMICS**

**COMPUTATIONAL FLUID  
DYNAMICS**

**VORTEX-INDUCED VIBRATIONS**

**ISOPE-2009**

**Osaka International Convention Center  
Osaka, Japan; June 21–26**

**Technical Program**

Refereed papers from **50** countries in **121** sessions and  
**6** plenary sessions

General Information, Reservations, Publication, Author  
Index and Program Updates on [www.isopec.org](http://www.isopec.org)

Forms for Advance Registration and Venue Hotel:

Inside this program and on [www.isopec.org](http://www.isopec.org)

*Organized by:*

Technical Program Committee, ISOPE

*Sponsored by:*

**International Society of Offshore and Polar Engineers  
(ISOPE)**

with cooperating organizations (list inside)



ISOPE, P.O. Box 189

Cupertino, CA 95015-0189, USA

Fax: +1-650-254-2038

[meetings@isopec.org](mailto:meetings@isopec.org); [www.isopec.org](http://www.isopec.org)

## TECHNICAL PROGRAM

### The Nineteenth (2009) International Offshore and Polar Engineering Conference Osaka, Japan, June 21–26, 2009

The number at end of the session title indicates the tentative number of the proceedings volume. Only the changes on titles or authors the ISOPE-2009 Technical Program Committee (TPC) received in writing before January 29, 2009 are reflected in this program. Final corrections will be updated in the Conference Proceedings of peer-reviewed papers and the Final Program. Proceedings CD-ROM (ISBN 978-1-880653-53-1; ISSN 1098-6189) will be available as a set of 4 volumes (3,500 pp. est.) from ISOPE during and after the Conference. Proceedings papers are indexed by Engineering Index and Compendex and others.

**SUNDAY, June 21**

**Conference Reception**

**Sponsored by Tsuneishi Holdings Corporation**  
17:00 Sakura Room, Rihga Royal Hotel, 2F

**MONDAY 09:00**

#### 1. Opening General Session:

##### OFFSHORE AND ARCTIC REVIEW – 2009 (V. 1)

**Monday June 22 09:00 Rm 1003, 10F**

**Chair:** Naito, S, Osaka Univ, Japan

**Co-Chair:** Jiang, X, China National Offshore Oil Corp., CNOOC, China

##### **Conference Opening Address**

Knapp, R H, President, ISOPE

##### **Sustainable Development and Marine Transport in the Arctic Ocean -- A Perspective and Cold Regions Technology**

Kitagawa, H, Ocean Policy Research Foundation, Japan

##### **Goes Deep, China Oil and Gas Industry**

Chen, W, Sr. Vice President, China National Offshore Oil Corp., China

##### **Global Functional Organization - the Key to Successful Materials Technology Implementation**

Wright, E J, ExxonMobil Development, USA

##### **Deepwater: Past, Present and Future**

Kapusta, S, Chief Scientist, Shell Global Solutions International BV, The Netherlands

## VORTEX-INDUCED VIBRATIONS

### 46. VORTEX-INDUCED VIBRATIONS I (V. 3)

**An Engineering Approach to VIV for Riser Interference**  
Saint-Marcoux, J-F, Acergy, UK; Blevins, R, Consultant; Wu, M, Acergy, USA

**Parameter Study of Simplified Assessment of Fatigue Damage for Deep Sea Riser VIV**  
Zhang, Q, Zhang R, Dalian Univ of Tech, China

**Nonlinear Multi-Mode Interactions in Subsea Risers Undergoing Vortex-Induced Vibrations**  
Srinil, N, Wiercigroch, M, Univ of Aberdeen; O'Brien, P, MCS International UK; Pavlovskaja, E, Univ of Aberdeen, UK

**The Viscous Flow Induced by an Arbitrary Moving Cylinder**  
Chu, C C, Chen, B F, National Sun Yat-Sen Univ, Taiwan, China

**Vortex-Induced Vibration Analysis of the Tendon Considering the Effect of Hull's Motion**  
Yan, G W, Xu, F, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

**Vortex-Induced Vibrations of Risers due to FPDSO Heave Motions**  
Lei, S, Zhang, W S, Yue, Q J, Lv, W, Dalian Univ of Tech, China

### 55. VORTEX-INDUCED VIBRATIONS II (V. 3)

**The Effect of Wavy Surface on Vortex Shedding from an Inclined Cylinder in Turbulent Flow**  
Lam, K, Lin, Y F, Hong Kong Polytechnic Univ; Zou, L, Wuhan Univ of Tech; Liu, Y, Hong Kong Polytechnic Univ, China

**Quasi-Steady Wake Oscillator Theory Applied to a Free Oscillation Problem of a Rigid Cylinder Undergoing VIV**  
Nishi, Y, Yokahama National Univ; Kokubun, K, Hoshino, K, Uto, S, National Maritime Research Inst, Japan

**Numerical Study of Fluid Force Reduction on a Square Cylinder**  
Zhou, C Y, Wang, C, Harbin Inst of Tech, China

**VIV and Wake-Induced Vibrations of Two and Three Cylinders Arranged In-Line**  
Etienne, S, École Polytechnique de Montréal, Canada; Fontaine, E, AMOG Consulting, Australia; Scolan, Y-M, École Centrale Marseille, France

**Vertical Pipe in Pipe Marine Riser - Tow Tank Tests and VIV Observations**  
Derradji-Aouat, A, National Research Council of Canada, Canada

**The Viscous Flow Induced by an Oscillating Circular Cylinder**  
Chu, C C, Chen, B F, National Sun Yat-Sen Univ, Taiwan, China

**Pattern Analysis for the Vortex Induced Vibration of a Towed Cable**  
Jung, D H, MOERI/KORDI, Park, H I, Korea Maritime Univ, Korea

**Vertical Riser VIV Simulation in Sheared Current**  
Huang, K, Chen, H C, Chen, C R, Texas A&M Univ, USA

**Numerical Simulation of Flexible Multi-Pipe Systems Subject to Outer and Inner Flow**  
Chen, Z S, Kim W J, Mokpo National Univ, Korea; Yu, D Y, Ocean Univ of China, China

# HYDRODYNAMICS AND COMPUTATIONAL FLUID DYNAMICS

**Wednesday**      **Plenary Presentation III (V. 3)**  
June 24                      08:00                      Room 1008

## **Lagrangian Particle Method - Advanced Technology for Numerical Wave Flume**

Gotoh, H, Kyoto Univ, Japan  
Introduction by Kashiwagi, M, Osaka Univ, Japan

### **3. HYDRODYNAMICS I: CFD 1 – Particle Method (V. 3)**

#### **Wave Impact Calculations by Improved ISPH Methods**

Khayyer, A, Gotoh, H, Kyoto Univ, Japan

#### **Simulation of the Wave Run-up and Overtopping Using Particle Level Set Method and Immersed Boundary Method**

Huang, C J, Lin, C Y, National Cheng Kung Univ, Taiwan, China

#### **Numerical Parameters Influencing Two Dimensional Water Entry Simulations**

Lee, H H, Hyundai Heavy Industries; Rhee, S H, Seoul National Univ, Korea

#### **Two Phases Flows Unstructured Grid Solver: Application to Tsunami Wave Impact**

Fraunie, P, Sambe, A, Golay, F, Université du Sud Toulon-Var; Marcer, R, Principia; Sous, D, Université du Sud Toulon-Var; De Jouette, C, Principia; Rey, V, Université du Sud Toulon-Var, France

#### **A Fast-Marching Semi-Lagrangian Level Set Method for Free Surface Flows**

Gu, H B, Causon, D M, Mingham, C G, Qian, L, Manchester Metropolitan Univ, UK

#### **Simulation of Armor Blocks in Front of Caisson Breakwater by DEM-MPS Hybrid Model**

Gotoh, H, Kyoto Univ; Ikari, H, NEWJEC Inc., Yasuoka, T, Kansai Electric Power Company, Japan

#### **Lagrangian Particle Method for Tracking of Buoy Moored by Chain**

Ikari, H, NEWJEC Inc.; Gotoh, H, Kyoto Univ, Japan

#### **Computational Method for Fluid-Forces Acting on Rigid and Elastic Objects**

Nozomu, K, Satoru, U, Kyoto Univ, Japan

#### **Jack-up Leg Hydrodynamic Load Study by CFD Simulations**

Zhang, B, Kang, C W, Lou, J, Inst of High Performance Computing, Singapore; Lee, S K, American Bureau of Shipping, USA; Yan, D, ABS Pacific, Singapore

### **13. HYDRODYNAMICS 2: CFD 2 – NWT (V. 3)**

**Numerical Wave Tank Study of a Wave Energy Converter in Heave**  
Hu, Z Z, Causon, D M, Mingham, C G, Qian, L, Manchester Metropolitan Univ, UK

#### **Generation of Extreme Wave Composed of Ring Waves in a Circular Basin**

Minoura, M, Takahashi, R, Naito, S, Osaka Univ, Japan

**Wave Generation and Absorption Using Force-Controlled Wave Machines**

Spinneken, J, Swan, C, Imperial College London, UK

**Measurements of Regular and Irregular Wave in Circular Tank**

Martins, J A A, Univ of Sao Paulo, Brazil

**2D Finite Volume Algorithm to Develop a Wave Generator**

Shafieefar, M, Tarbiat Modares Univ; Panahi, R, Transportation Research Inst, Iran

**Computational Fluid Dynamic Simulations of Active Wave Makers**

Maguire, E, Ingram, D, Univ of Edinburgh, UK

**Nonlinear Solution for Vibration of Vertical Elastic Plate by Initial Elevation of Free Surface**

He, G H, Kyushu Univ; Kashiwagi, M, Osaka Univ, Japan

**Dynamic Responses of Moored Floating Dual Pontoon Structure in a Fully Nonlinear Numerical Wave Tank**

Huang, C C, Tang, H J, National Sun Yat-Sen Univ, Taiwan, China

**Wavelet Transform Analysis of Freak Waves and the Ringing Response of Vertical Cylinder in a Numerical Wave Tank**

Pang, H L, Shanghai Jiao Tong Univ; Zhang, Q H, Han, T, Qin, C G, Tianjin Univ, China

**22. HYDRODYNAMICS III:  
CFD 3 (V. 3)**

**Parallel Finite Element Simulation of Flow around a Circular Cylinder**

Kakuda, K, Nihon Univ; Minura, S, Tokyo Metropolitan College of Technology, Japan

**Application of LES and DES Turbulence Models on Flow around Bluff Bodies Using Cartesian Cut Cell Grids**

Bai, W, Mingham, C G, Causon, D M, Qian, L, Manchester Metropolitan Univ, UK

**Numerical Study on Motion of Submerged Body in Waves**

Suzuki, H, Shimamura, T, Osaka Univ; Miura, K, Universal Shipbuilding; Kato, N, Osaka Univ, Japan

**Numerical Simulation of 3D Submarine Turbidity Currents**

La Rocca, M, Adduce, C, Mele, P, Sciortino, G, Univ Roma TRE, Italy

**Large Eddy Simulation of Particle-Laden Flow by Using Solid/Liquid Two-Phase Flow Model**

Harada, E, Gotoh, H, Kyoto Univ, Japan

**Two-Dimensional Flow Simulation of Bingham Fluid by Multiphase Flow Numerical Model**

Kawasaki, K, Osigo, K, Takasu, Y, Nagoya Univ, Japan

**RANS Simulations of Ship Motions in Regular and Irregular Head Seas Using the SWENSE Method**

Monroy, C, Ducrozet, G, Gentaz, L, Ferrant, P, Alessandrini, B, École Centrale de Nantes, France

**Applying Computational Fluid Dynamics to Simulate Bank Effects**

Lo, D C, Su, D T, Lin, I F, Chen, J M, National Kaohsiung Marine Univ, Taiwan, China

**32. HYDRODYNAMICS IV:  
CFD 4 & MetOcean (V. 3)**

**Spatio-Temporal Behaviour of Wind and Sea States in the Hellenic Seas**

Soukissian, T H, Hellenic Centre for Marine Research, Greece; Tzortzi, E, Univ of Southampton, UK; Kokkali, A, Univ of Aegean, Greece

**A Numerical Simulation Method of Typhoon Waves**  
Zhu, Z, Yang, Y, Zhou, K, Shanghai Jiao Tong Univ, China

**Wave Height Forecasting Using Self-Organization Algorithm Model**  
Tsai, T M, Yen, P H, Huang, T J, National Cheng Kung Univ, Taiwan, China

**Characteristics of Infragravity Waves Observed Along Japanese Coasts**  
Nakai, K, ECOH Corp; Noriaki, H, Kyushu Univ, Japan

**Experiment in Area of the Mouth of Izmenchivoe Lake**  
Kovalev, P D, Inst of Marine Geology and Geophysics, RAS; Kurkin, A A, Novgorod State Technical Univ; Shevchenko, G V, Inst of Marine Geology and Geophysics, RAS; Chernov, A G, Nizhny Novgorod State Technical Univ; Kovalev, D P, Gorbunov, A O, Sakhalin State Univ, Russia

**Observed Tidal Currents and the Characteristics of Principal Tidal Constituents in the South China Sea Deep Basin in 1997-1999**  
Zhang, T, First Inst of Oceanography; Li, P, Zhao, W, Zuo, J, Ocean Univ of China, China

**Decadal and Long-Term Sea Level Variations at Pacific Coast of Japan**  
Gu, X L, Li, P L, Ocean Univ of China, China

**Hydrodynamic and Thermohaline Circulation Model and Its Application**  
Abualtayef, M T, Kuroiwa, M, Khaled Seif, A, Matsubara, Y, Tottori Univ, Japan

#### **42. HYDRODYNAMICS V: CFD 5 & MetOcean (V. 3)**

**Numerical Study on Generation of Cnoidal Waves and Induced Viscous Flow over a Wavy Bed**  
Li, T C, Tang, C J, National Cheng Kung Univ, Taiwan, China

**Evolution of Stokes Wave Side-Band Instability along a Super Tank: Experiments and Saturation Modification of Tulin & Landrini NLS Model**  
Yang, R Y, Hwung, H H, Shugan, I V, Chiang, W S, National Cheng Kung Univ, Taiwan, China

**Application of Wavelet Transfer to Spectral Analysis of Surface Wave Method**  
Ni, S H, Yang, Y Z, National Cheng Kung Univ, Taiwan, China

**Simulation of Internal Waves in Two-Layer Fluids by a Two-Domain Boundary Element Method**  
Koo, W C, Univ of Ulsan, Korea

**Structure of the Head of Gravity Currents in a Long Channel**  
Baba, N, Koue, J I, Osaka Prefecture Univ, Japan

**An Implicit Three-Dimensional Hydrodynamic Model for Free-Surface Flows**  
Wang, K, Jin, S, Liu, G, Dalian Univ of Tech, China

**Analysis of Marine Accident and Freak Wave Prediction with an Operational Wave Model**  
In, K, Waseda, T, Kiyomatsu, K, Univ of Tokyo; Tamura, H, JAMSTEC, Japan

#### **52. HYDRODYNAMICS VI: CFD 6 & MetOcean (V. 3)**

**Numerical Simulation of Current under Waves, Tides, and Typhoon**  
Zhang, J, Liang, B C, Li, H, Ocean Univ of China, China

**Application of the Statistics of Extreme Value Theory on Non-Linear Ocean Waves**

Liu, J D, Fugro Seismic Imaging AS; Krogstad, H E, Norwegian Univ of Science and Tech, Norway

**Further Modification Practical Method for Estimating Directional Wave Spectrum by HF Radar**

Lukijanto, Hashimoto, N, Yamashiro, M, Kyushu Univ, Japan

**Simulation and Analysis of Ocean Waves in the Northwest Pacific Ocean**

Zhu, Z X, Zhou, K, Yang, Y, Shanghai Jiao Tong Univ, China

**Estimation of Sea Conditions in a Long Return Period around Japan**

Ishida, S, Kokubun, K, National Maritime Research Inst, Japan

**Study Wave Regimes Southern Okhotsk Sea on Annual Results of Continuous Observations**

Kuznetsov, K I, Chernov, A G, Kurkin, A A, Nizhny Novgorod State Technical Univ, Russia

**Comparisons between the Wind Wave Results from WAVEWATCH III and the Observed Data**

Liu, S, Sun, J, Guan, C L, Ocean Univ of China, China

**Numerical Modelling of 3D Oblique Waves by L-Type Multiple Directional Wave Generator**

Shih, R S, Tungnan Univ; Chou, C R, Weng, W K, National Taiwan Ocean Univ, Taiwan, China

**59. HYDRODYNAMICS VII:  
CFD 7 -Nonlinear (V. 3)**

**Extreme Loads Due to Wave Breaking Against Platform Column**

Suyuthi, A, NTNU; Haver, S K, StatoilHydro, Norway

**Numerical Simulation of Wind Effects on Breaking Solitary Waves**

Yan, S, Ma, Q W, City Univ of London, UK

**The Statistical Characteristics of Wave Forces on Vertical Cylinders in Shallow Water Area**

Gao, Y Y, Yu, D Y, Li, C L, Ocean Univ of China, China

**Numerical Simulation of Green Water Incident on Bow Deck**

Kang, B H, Lee, Y G, Kim, N C, Yu, J W, Inha Univ, Korea

**Numerical Investigation on Violent Wave Impact on Offshore Wind Energy Structures with Meshless Method**

Zhou, J T, Ma, Q W, City Univ, UK; Zhang, L, Harbin Engineering Univ, China

**Numerical Simulation of Wave Impact on the Structures Using Nested Grid**

Li, X, Ren, B, Wang, Y, Dalian Univ of Tech, China

**Refined Reproduction of a Plunging Breaking Wave and Resultant Splash-Up by 3D-CMPS Method**

Gotoh, H, Khayyer, A, Kyoto Univ; Ikari, H, NEWJEC Inc., Hori, C, Kyoto Univ, Japan

**Impulsive Wave Force due to Tsunamis Impinging and Overtopping an Impermeable Breakwater upon a Sloping Beach**

Lin, T C, Hsiao, S C, Hwang K S, National Cheng Kung Univ, Taiwan, China

**A Study on Practical Prediction Method for Disaster of Floating Vessels Induced by Tsunami and Development of Marine Tsunami Hazard Map**

Masuda, K, Ikoma T, Otsuka, F, Suzuki, Uta, S, Nihon Univ, Japan

**77. HYDRODYNAMICS VIII:  
CFD 8 -Wave Forces (V. 3)**

**Wave Pressure Distributions of an Elastic Floating Structure Model  
Subjected to Harmonic Waves**

Kawakami, Y, Endo, R, Polytechnic Univ, Japan

**Numerical Analysis of the Forces Exerted on a Truncated Cylinder by  
Ship Waves**

Sun, L, Dong, G H, Zong, Z, Dalian Univ of Tech, China

**Jack-up Leg Hydrodynamic Load Prediction - a Comparative Study  
of Industry Practice with CFD and Model Test Results**

Lee, S K, American Bureau of Shipping, USA; Yan, D, American Bureau  
of Shipping, Singapore; Zhang, B, Kang, C W, Inst of High Performance  
Computing, Singapore

**The Reciprocal Form of Mean Wave Drift Force and Yaw Moment**

Tsubogo, T, Osaka Prefecture Univ, Japan

**Validation of Nonlinear Wave Load Prediction Method Using Segmented  
Model Tests for Large Container Carrier**

Kim, S G, American Bureau of Shipping, USA; Hong, S Y, KORDI, Korea;  
Yu, H C, American Bureau of Shipping, USA

**Experimental Investigation of Wind Forces Acting on Container Ships**

Fujiwara, T Tsukada, Y, Kitamura, F, Sawada, H, National Maritime  
Research Inst, Japan

**A Study on Wind Pressure Characteristics of Ships with Large  
Superstructures**

Momoki, T, Onishi, S, Katayama, T, Ikeda, Y, Osaka Prefecture Univ, Japan

**86. HYDRODYNAMICS IX:  
Tsunami (V. 3)**

**Analytical Estimation of the Maximum Wave Height and the  
Inundation Distance in East Sri-Lanka Induced During the 2004 Indian  
Ocean Tsunami**

Lin, C H, National Sun Yat-Sen Univ; Cheng, C Y, Fisheries Research Inst;  
Liu, J C, Chen, G Y, National Sun Yat-Sen Univ, Taiwan, China

**Investigation of Tsunami Wave Runup over Vegetated Slopes**

Chen, H L, National Univ of Singapore, Singapore; Lin, P, Sichuan Univ,  
China; Chan, E S, National Univ of Singapore, Singapore

**Micro Uidic Study of the Triggering of Underwater Tsunamigenic  
Landslides**

El Bettah, M, TU Braunschweig, Germany; Grilli, S T, Univ of Rhode  
Island, USA; Krafczyk, M, TU Braunschweig, Germany; Baxter C D P,  
Bollinger, K A, Univ of Rhode Island, USA

**Field Survey on Effect of Coastal Vegetation to Reduce Tsunami Force  
in 2007 Solomon Island Earthquake**

Hiraishi, T, Port and Airport Research Inst, Japan

**Real-Time Probabilistic Prediction of Storm Water Level at Japanese  
Ports**

Kawai, H, Port and Airport Research Inst; Hashimoto, N, Yamashiro, M,  
Kyushu Univ, Japan

**Recording of Simushir and Nevelsk Tsunamis in the Kholmok Port**

Kovalev, P D, Shevchenko, G V, Kovalev, D P, Inst of Marine Geology and  
Geophysics, RAS; Chernov, A G, Nizhny Novgorod State Technical Univ,  
Russia

**Tsunami Registration in the Harbors of Shikotan Island**

Shevchenko, G, Shishkin, A, Bogdanov, G, Loskutov, A, Inst of Marine  
Geology and Geophysics, RAS, Russia

**94. HYDRODYNAMICS X:  
CFD 9 & Dynamics 1 (V. 3)**

**Numerical Simulation of Floating Body Motions in Finite Water Depth Using the 3D Transient Green Function**

Liu, C F, Teng, B, Gou, Y, Dalian Univ of Tech, China

**Time-Domain Computations of Ship Motion with Constant Forward Speed Using Finite Element Method**

Nam, B W, Sung, H G, Hong, S Y, Maritime & Ocean Engineering Research Inst, Korea

**Time-Domain Analysis of Nonlinear Ship Motion Responses Based on Weak-Scatterer Hypothesis**

Kim, K H, Kim Y H, Seoul National Univ, Korea

**Numerical Solutions of Hydrodynamic Interaction of Ships in the Time Domain**

Qiu, W, Peng, H X, Memorial Univ of Newfoundland, Canada

**Algorithm for Finding Extreme Motions of Forward Speed Vessels**

Dhavalikar, S, Negi, A, Indian Register of Shipping, India

**An Experimental Research on the Prediction of the Ship Motions Using Time-Series Analysis**

Zhang, X, Ye, J, South China Univ of Tech, China

**Numerical Simulation of Nonlinear High-Speed Planing Craft Motions in Waves**

Peng, H X, Qiu, W, Memorial Univ of Newfoundland, Canada

**Transfer of Non-Linear Seakeeping Loads to FEM Models Using Quasi Static Approach**

Tuitman, J, Delft Univ of Tech, The Netherlands; Sireta, F-X, Malencia, S, Bureau Veritas, France; Bosman, T, Delft Univ of Tech, The Netherlands

**104. HYDRODYNAMICS XI:  
CFD 10 & Dynamics 2 (V. 3)**

**Numerical Calculation of Wave-Making Resistance Generated by Submerged Moving Object**

Shen, L, WorleyParsons, Singapore

**Numerical Studies on Resistance Prediction Methods for Submerged Bodies**

Fu, H P, Zhang, Y, Shanghai Jiao Tong Univ, China

**Practical Green Function for Steady Flow about a Ship**

Noblesse, F, NSWCCD, USA; Delhommeau, G, Ecole-Centrale de Nantes, France; Yang, C, George Mason Univ, USA

**Kelvin Ship Wake Modification Due to Wind Waves**

Shugan I V, Hwung, H H, Yang, R Y, National Cheng Kung Univ, Taiwan, China

**Pure Loss of Stability of ONR Tumblehome in Following Seas**

Hashimoto, H, Osaka Univ, Japan

**An Experimental Study on Viscous Effects on Longitudinal Motion of Drifting Buoy**

Katayama, T, Momoki, T, Osaka Prefecture Univ; Higuchi, Y, Kawasaki Shipbuilding; Tarao, Y, Osaka Prefecture Univ; Aso, H, Zeni Lite Buoy, Japan

**113. HYDRODYNAMICS XII:  
CFD 11 & Multibody Dynamics 3 (V. 3)**

**Simulation of Multi-Body Systems in Waves**

Doig, R, Kaeding, P, TKMS Blohm + Voss Nordseewerke, Germany

**Hydrodynamic Analysis for Side-By-Side Offloading**

Bunnik, T, MARIN, The Netherlands; Voogt, A, Pauw, W, MARIN, USA

**Two Ships Operating in Close Proximity in Rough Sea**

Li, L, American Bureau of Shipping, USA

**Numerical Studies on Nonlinear Hydrodynamic Interactions of Side-by-Side Moored Vessels in Extreme Waves**

Lu, H D, Yang, C, Löhner, R, George Mason Univ, USA

**Fully Nonlinear Hydrodynamic Interaction between Two 3D Floating Structures in Close Proximity**

Yan, S, Ma, Q W, City Univ, UK

**A Study on the Flow Pattern around a Multi-Submerged Body According to the Body Gap**

Gim, O S, Ministry of Land Transport and Maritime Affairs; Lee, G W, Mokpo National Maritime Univ, Korea

**Numerical Simulation of Wave-Current Flow Field around Pile Groups by a Vortex Method**

Chen, B, Teng, B, Dalian Univ of Tech, China

**Discrete Event/Discrete Time Simulation of Block Erection by a Floating Crane Based on Multibody System Dynamics**

Cha, J H, Lee, K Y, Ham, S H, Seoul National Univ; Roh, M I, Univ of Ulsan; Park, K P, Suh, H W, Daewoo Shipbuilding & Marine Engineering, Korea

**101. HYDRODYNAMICS XIII:  
Roll & Damping (V. 3)**

**Experimental and Numerical Analysis of the Roll Decay Motion for a Patrol Boat**

Broglia, R, Boucasse, B, Di Mascio, A, Lugni, C, INSEAN, Italy

**Parametric Roll of ONR Tumblehome in Head Seas**

Hashimoto, H, Umeda, N, Sogawa, Y, Osaka Univ, Japan

**Study on Assessment of Comfort and Roll Stabilization for Passenger Ships**

Kim, J H, Kim, H Y, Seoul National Univ; Kim, D W, Kim, Y S, Daewoo Shipbuilding & Marine Engineering, Korea

**Study on Nonlinear Roll Motion of Containerships in Waves**

Kim, T Y, Song, K H, Kim, Y H, Seoul National Univ, Korea

**Numerical Simulations of Viscous Flows with Induced Moving Discs in a Periodic Lid-Driven Cavity**

Wan, D C, Shanghai Jiao Tong Univ, China

**111. HYDRODYNAMICS XIV: Dynamics & Design (V. 3)**

**Variable Fidelity Optimization in Ship Design**

Kim, H Y, Yang, C, Kim, H Y, George Mason Univ, USA; Chun, H H, Pusan National Univ, Korea

**A Practical Optimization Tool for Hydrodynamic Design of Ship Hull Forms**

Kim, H Y, Yang, C, Kim, H J, Löhner, R, George Mason Univ; Noblesse, F, NSWC-CD, USA

**Numerical Simulation of Flow around a Pod Propeller**

Li, W, Shanghai Jiao Tong Univ, China; Yang, C, George Mason Univ, USA

**Dynamic Response Evaluations of Offshore Platform with Porous Cylinders**

Su, P M, Kawano, K, Kagoshima Univ, Japan

**Modelling Coastal Run-up by a Well-balanced Shallow Flow Solver**

Liang, Q, Wang Y, Newcastle Univ, UK; Archetti, R, Univ of Bologna, Italy; Hall, J W Newcastle Univ, UK

**A Fast ADI Method for Two-Dimensional Shallow Water Equations**

Kim, H, Jang, C H, Lee, Y, Kookmin Univ, Korea

**Dynamic Behavior of a Submersible Fish Cage**

Lee, C W, Lee, J H, Lee, G H, Choe, M Y, Lee, M K, Song, D H, Pukyong National Univ, Korea

**120. HYDRODYNAMICS XV:  
Dynamics 4 & Measurements (V. 3)**

**Development and Assessment of a High Precision Optical Wave Gauge**

Payne, G S, Univ of Edinburgh; Richon, J-B, Laser & Imaging Sciences, UK

**3-D Wave Field Measurements Using Reflected Light Image**

Sanada, Y, Takayama, A, Toda, Y, Osaka Univ; Hamachi, S, Universal Shipbuilding, Japan

**Measurement of Greenwater on a 3D Structure**

Chang, K A, Ariyaratne, K, Mercier, R, Texas A&M Univ, USA

**Application of Non-Metric Camera for In-Situ Measurement for Ocean Engineering Research**

Wang, C C, Liao, Y C, National Sun Yat-Sen Univ, Taiwan, China

**Application of a Pan/Tilt Control Camera in Coastal Image Research in His-Tzu-wan Bay**

Hsiao, Y H, Chuang, S C, Huang, M C, National Cheng Kung Univ, Taiwan, China

**Experimental Study of Breaking Wave Loads on Vertical Walls**

Kang, H G, Sun, Y, Dalian Univ of Tech, China

**Non-Homogeneity of Nearshore Wave Field from X-Band Radar Images**

Feng, X, Yan, Y, Hohai Univ, China; Kao, C C, Wu, L C, National Cheng Kung Univ, Taiwan, China

**Acoustic Tomography of Hydrophysical Processes in Ocean Shelf Zones**

Strobykin, D S, Morgunov, Y N, V.I. Il'ichev Pacific Oceanological Inst, FEB RAS, Russia

**Non-Intrusive Technique for Identifying Solute Dispersion in Porous Media Using Image Analysis**

Inoue, K, Takenouchi, R, Matsunaga, N, Tanaka, T, Kobe Univ, Japan