Technical Program

Refereed papers from 50 countries in 149 sessions and 6 plenary sessions

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Organized by: Technical Program Committee, ISOPE
Sponsored by:
International Society of Offshore and Polar Engineers (ISOPE)
China National Offshore Oil Corporation (CNOOC)
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The ISOPE-2010 participants and ISOPE board of directors would like to thank:

Supporters of ISOPE-2010 Beijing Conference
Welcome to ISOPE-2010 Conference

We greatly appreciate the excellent responses with 1362 abstracts and help we have received from colleagues around the world in the successful organization of the 20th International Offshore and Polar Engineering Conference (ISOPE-2010), Beijing, China, June 20–26, 2010. The Conference features 149 sessions of refereed papers and 6 plenary sessions from more than 50 countries, including the ISOPE specialty symposia, part of ISOPE-2010 Conference.

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The purposes of the ISOPE conference are to:
* Promote technological progress and activities, international technological transfer and cooperation, and opportunities for engineers to maintain and improve technical competence; and
* Provide a timely international forum for technical activities, cooperation, opportunity and fellowship among researchers and engineers, by developing focused session topics with high quality (in both originality and significance) papers accepted through rigorous review, establishing high international standards for publication and worldwide distribution and promoting interdisciplinary interaction between academia and industry.

The International Society of Offshore and Polar Engineers (ISOPE) has already held 45 successful international meetings:
• 1st (1990) European Offshore Mechanics Symposium (EUROMS-90) Trondheim; EUROMS-99 Moscow;
• Annual ISOPE conferences, starting in Edinburgh, 1991 were held in San Francisco, Singapore, Osaka, The Hague, Los Angeles, Honolulu, Montréal, Brest, Seattle, Stavanger, Kitakyushu, Honolulu, Toulon, Seoul, San Francisco, Lisbon, Vancouver and Osaka. Since 1992, the annual ISOPE conference program has been the world's largest of its kind with refereed papers;
• ISOPE ANGT Symposium: Seoul 2005;
• ISOPE HPM : 1st NANOS Symposium: Lisbon 2007

On behalf of the Technical Program Committee, it is our pleasure to welcome participants from all over the world to the ISOPE-2010 Conference in Beijing.

Jin S Chung, Xizhao Jiang, Shigeru Naito
USA China Japan
Michael Isaacson, A JNA Sarmento, Cuneyt Capanoglu
Canada Portugal USA

Co-chairmen of the ISOPE-2010 Conference
Beijing, China, June 20–26, 2010

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-2010 Technical Program Committee (TPC) received in writing before February 25, 2010 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 978-1-880653-77-7; ISSN 1098-6189) will be available as a set of 4 volumes (4,500 pp. est.) from ISOPE during and after the Conference.

Proceedings papers are indexed by Engineering Index and EI Compendex and others.

This internet version of the ISOPE-2010 program lists all authors and their affiliations, while the printed version listed the first author information only to meet the page limitation for airmailing.

SUNDAY, June 20
Conference Reception
Sponsored by China National Offshore Oil Corp.
17:00 Ballroom A, 1F

MONDAY 08:30

1. Opening General Session:
2. OFFSHORE AND ENERGY INDUSTRY REVIEW — 2010 (V. 1)
Monday June 21 08:30 Ballroom, 1F

Chair: Xizhao Jiang, President, China Offshore Oil Engineering Co., CNOOC, China
Co-Chair: Jay Koo, President, SK Energy, Korea

Conference Opening Address
Hermann Moshagen, ISOPE President, BHM Engineering, Norway
Welcome Address
Chengyu Fu, President, China National Offshore Oil Corp., China

Global Energy Demand and its Implications for Frontier Resources [Oral presentation]
Michael Ray, Upstream Sector Director, Corporate Strategic Research. ExxonMobil Research & Engineering, USA

Prosperity of Offshore Oil Development of China
Shouwei Zhou, Vice President, China National Offshore Oil Corp., China

Subsea Compression — Ormen Lange [Oral presentation]
Bernt Bjerkreim, Facility Manager, Midgard Subsea Compression, Statoil; Ola Eivind Rye; Project Manager, Subsea Compression Pilot, Ormen Lange, Statoil; Jesper Marstrand, Subsea Systems Manager, Ormen Lange, Shell, Norway

2. LNG SLOSHING I (V. 3)
Monday June 21 10:30 310, 3F

Chair: Chun H, ISOPE, USA

Plenary 1
Dias, F, University College Dublin, Ireland; Kashiwagi, M, Osaka Univ, Japan; Kim, Y H, Seoul National Univ, Korea; Kuo, J F, ExxonMobil Upstream Research, USA

Methodology for LNG Terminals
Diebold, L, Moirod, N, Henry, J, Baudin, E, Bureau Veritas, France

Experimental and Numerical Investigations of the Global Forces Exerted by Fluid Motions on LNGC Prismatic Tanks Boundaries
Diebold, L, Moirod, N, Baudin, E, Gazzola, T, Bureau Veritas, France

Development of a New Reduction Device of Sloshing Load in Tank
Ando, T, Anai, Y, Tanaka, Y, Watanabe, N, Murakami, C, National Maritime Research Inst, Japan

Structural Response of Insulation Box on NO96 Membrane Containment System
Dobashi, H, Usami, A, Nippon Kaiji Kyokai, Japan

3. HYDRODYNAMICS I: Ocean Waves 1 (V. 3)
Monday June 21 10:30 311A, 3F

Chair: Ghidaglia, J-M, ENS-Cachan, France

Experimental Validation of Deterministic Non-linear Wave Prediction Schemes in 2D
Blondel, E, Bonnefoy, F, Ferrant, P, Ecole Centrale de Nantes, France

Interdecadal Variation of Tropical Cyclone over Western North Pacific
Zhang, Z X, South China Sea Inst of Oceanology, China

An Empirical Wave Envelope Spectrum and the Simulation of Irregular Sea Wave Groups
Liu, S, Liu, S X, Yu, Y X, Li, J X, Dalian Univ of Tech, China

Application of Artificial Neural Networks to Wave Nowcasting
De Masi, G, Saipem Energy Services, Italy

Significant Wave Height Estimation Based on the Linear Mean-square Estimation Method
Gao, Y Y, Yu, D Y, Cu, D L, Li, C L, Ocean Univ of China, China

Sea Surface Roughness under Extreme Wave Conditions
Papadimitrakis, Y, National Tech Univ of Athens, Greece; Carlsson, B, Uppsala Univ, Sweden

Application Research of Homotopy Analysis Method in Nonlinear Water Wave Equation
Liu, Y L, Zhang, H, Zhejiang Ocean Univ, China

4. Deepwater Installation I (V. 1)
Monday  June 21  10:30  311B, 3F

Chair: Lim, , FK, 2H Offshore Engineering, UK
Co-Chair: Liu, J, CPOE, China

Plenary 2

Latest Progress in Floatover Technologies for Offshore Installations and Decommissioning
Wang, A M, Jiang, X Z, Yu, C S, Zhu, S H, Li, H L, Wei, Y G, COOEC, China

Deep Water Installation Based on Fiber Rope Deployment Systems
Teigen, Statoil; Torben, S, Ingeberg, ODIM, Norway

Predicting the Initial Embedment of a Pipeline Based on As-Laid Data
Oliphant, J, Maconochie, A, Technip UK, UK; Julia, T, Technip France, France

Numerical and Model Test Results for Heavy Lift and Salvage System: Bottom Feeder Stretch
Yu, S, Zhong, Z Y, VersaMarine Engineering; Greeves, J, VersaBar, USA

Moment Capacity of Manufacturing Imperfection in Bend in Deep Sea Oil Field
Liu, S L, Alastair, W, Cooper, P, IntecSea (UK), UK

5. LNG & Process (V. 1)
Monday  June 21  10:30  306AB, 3F

Chair: Kang, R, CPOE, China
Co-Chair: Sohn, Y S, Korea Gas, Korea

Mechanical Drive Technology for a Large LNG FPSO
Nam, S W, Kim, T H, Samsung Heavy Industries, Korea
Dynamic Behavior of LNG Storage Tank during Leakage Conditions
Wei, H D, Zhou, M Z, COOEC; Yan, S Z, COOEC; Enpal Engineering, China

Analysis of Liquefaction Process for Domestic Mixed Refrigerant Liquefaction Plant
Zhao, B J, Zhang, J H, Hu, Y H, CNPC, China

Selection and Simulation of Offshore LNG Liquefaction Process
Zhu, J L, Li, Y X, Liu, Y H, Wang, W W, China Univ of Petroleum, China

Development of Bog Recondensing System by use of Cold Energy Wasted in LNG FSRU
Kim, D H, Sohn, Y S, Yang, Y M, Korea Gas Corp, Korea

Design Development of BOG Handling System in LNG-FSRU
Sohn, Y S, Kim, D H, Choi, S H, Yang, Y M, Korea Gas, Korea

Application of Bayesian Networks in Safety Zone of LNG Carriers in Harbor Waters
Gan, L X, Shanghai Jiao Tong Univ/ Wuhan Univ of Tech; Zou, Z J, Shanghai Jiao Tong Univ, China

**STRAIN-BASED DESIGN SYMPOSIUM - 2010**

6. SBD I: Strain Demand (V. 4)
Monday June 22 10:30 307AB, 3F

Chair: Mannucci, G, CSM, Italy
Co-Chair: Igi, S, JFE Steel, Japan

The Third (2009) Strain-Based Design Symposium - A Review
Newbury, B D, ExxonMobil Development, USA

Mechanical Model for Evaluating the Safety of Pipeline Subject to Slow Landslide Based on GPS Monitoring System
Wang, X L, Zhong Yuan Petroleum Exploration Bureau, China

Improved Ultrasonic Piezoceramic Sandwich Transducer
Jiang, L, Hong, M, Dalian Univ of Tech, China

Comparative Study of Modal Strain Energy Based Damage Localization Methods for Three-Dimensional Structure
Wang, S Q, Lin, Y Y, Ma, S Y, Ocean Univ of China, China

Structure Damage Detection Method Based on Modal Strain Energy
Yang, F Y, Li, M R

Application of Design by Analysis Procedures for Deepwater Subsea Tie-in Systems
Casola, F, El-Chayeb, A, Delle-Canne, A, Saipem, France

Identification of Vibration Energy Flow Characteristics in Coupled Plates by Visualization Techniques
Li, K, Li, S, Zhao, D Y, Dalian Univ of Tech, China

Analytical Approach of Limit State Assessment for Multi-axially Loaded UOE Line Pipe
Hoehler, S, Zimmermann, S, Salzgitter Mannesmann Forschung; Kalwa, C, Europipe GmbH, Germany
Simplified Strain Prediction for HPHT Pipe-In-Pipe Strain Based Design
Farahani, K, Lee, D, MacKellar, I, INTECSEA (UK), UK

NANOMATERIALS SYMPOSIUM ISOPE-2010

7. NANOMATERIALS I:Applications 1 (V. 4)
Monday June 21 10:30 308, 3F

Chair: Kabacoff, L, Office of Naval Research, USA
Co-Chair: Akdogan, EK, Rutgers Univ, USA

Introductory Remarks: Nanomaterials and Nanotechnology
Tsakalakos, T, Rutgers Univ; Kabacoff, L, Office of Naval Research, USA

Progress in Ultrafine Grained and Nanostructured Steel
Morris, J W, Univ of California-Berkeley, USA

Hall-Petch Relationship in Nanocrystalline Materials
Pande, C S, Naval Research Laboratory, USA

Ultra Sensitive Piezoresistive All-Organic Flexible Thin-films and Strain Sensors based on Nanostructured Polymeric Composite Materials
Veciana, J, Institut de Ciencia de Materials de Barcelona; Laukhina, E, CIBER-BBN; Pfattner, R, Ferreras, L R, Institut de Ciencia de Materials de Barcelona; Laukhin, V, Inst Catalana de Recerca i Estudis Avancat, Spain; Galli, S, Univ dell’Insubria, Italy; Mas-Torrent, M, Institut de Ciencia de Materials de Barcelona, Spain; Masciocchi, N, Univ dell’Insubria, Italy; Rovira, V C, Institut de Ciencia de Materials de Barcelona, Spain

Fully-Relativistic DFT Calculations of the Geometrical and Electronic Structure of Small Gold Clusters
Rosen, A, Gothenburg Univ, Sweden; Anton, J, Jacob, T, Ulm Univ, Germany

Nano-crystals, Quasi-crystals and the Fascinating World of Nano-quasicrystals
Pratap, A, Lad, K N, Univ of Baroda; Day, G K, Banerjee, S, Bhabha Atomic Research Centre, India

Glassy Structure and Plasticity of Nanostructure Controlled Zr-based Bulk Metallic Glasses
Saida, J, Setyawan, A D, Inoue, A, Tohoku Univ, Japan

New Synthetic Approaches to Functionalized Chalcogenide Nanostructures
Tremel, W, Yella, A, Panthöfer, M, Tahir, N, Sahoo, J, Mugnaioli, E, Kolb, T, Jonnes Gutenberg-Univ, Germany

Nano-crystals and Nano-crystallography: ordinary materials with extraordinary properties
Pasz, B, Polish Academy of Sciences, Poland

Nanostructure Mesoporous Thick Films of Titania for Energy Harvesting
Wang, J, Zhang, Y, National Univ of Singapore, Singapore
Nanostructured Materials for Extreme Environments  
Simos, N, Brookhaven National Laboratory, USA

TEM Studies on Nanostructured Coatings of Alumina-Titania and Titania  
Jin, H W, ExxonMobil Research & Engineering, USA

8. VORTEX-INDUCED VIBRATIONS I (V. 3)
Monday June 21 10:30  301AB, 3F
Chair: Miksad, RW, Univ of Virginia, USA  
Co-Chair: Kim, WJ, Mokpo National Univ, Korea

The Effect of Incoming-boundary-layer Thickness on Flow over a Fixed Circular Cylinder near a Plane Wall  
Chung, M H, National Kaohsiung Marine Univ, Taiwan, China

A Modified Wake Oscillator Model for Predicting Vortex Induced Vibration of a Circular Cylinder  
Xu, W H, Zeng, X H, Wu, Y X, Inst of Mechanics, CAS, China

Physical Understandings in Establishing Coupled Structure-wake Oscillator for Vortex-induced Vibrations  
Lin, L M, Song, F, Wu, Y X, Ling, G C, Inst of Mechanics, CAS, China

The Prediction of Riser Vortex-induced Vibration in Stepped Current by a New Wake Oscillator Model  
Xu, W H, Tianjin Univ; Wu, Y X, Zeng, X H, Inst of Mechanics, CAS, China

An Experimental Investigation of the Flow in the Wake of a Pair of Small-incidence-angle Cylinders with the Downstream One Subjected to Transverse Harmonic Oscillation  
Hayder, M A, McGill Univ, Canada

Flow around a Single Cylinder Subject to Cross-flow Harmonic Oscillations  
Vitola, M A, COPPE/UFRJ; Pinto, W T, Unv Federal de Rio Grande; Alho, A T P, Levi, C A, COPPE/UFRJ, Brazil

Hydrodynamic Flow Separation Control through Vortex Generators  
Xu, J S, Xie, J, Yu, C, Shanghai Jiao Tong Univ, China

Flow Characteristics behind Two Unequal Circular Cylinders in Tandem Arrangement  
Gao, Y Y, Ocean Univ of China, China; Etienne, S, Ecole Polytechnique de Montreal, Canada; Yu, D Y, Ocean Univ of China, China; Tan, S K, Nanyang Technological Univ, Singapore

Effect of Rotational Degree of Freedom on Vortex-Induced Vibrations of a Circular Cylinder in Cross-Flow  
Etienne, S, Ecole Polytechnique de Montreal, Canada; Fontaine, E, Amog Consulting, Australia

2nd FRONTIER ENERGY RESOURCES TECHNOLOGY SYMPOSIUM

9. FRONTIER ENERGY RESOURCES I: Clean Energy I (V. 1)
Monday June 21 10:30  302AB, 3F
Chair: Ayer, R, ExxonMobil Research & Engineering Co., USA  
Co-Chair: Chen, T P, Nexant, Inc, USA

Green Coal Technology [Oral presentation]  
Park, S R, Kim, G T, Kim, D S, SK Energy, Korea

Advancement in Direct Coal Liquefaction  
Chen, T P, Nexant, Inc, USA

Coal Drying by a Pneumatic Conveying System  

Numerical Analyses and Engineering Calculations for the Conceptual Design of Compact Gasifier  
Lee, J W, Chung, S W, Heo, R H, Yun, Y S, Institute for Advanced Engineering; Choi, S H, Innoflow Co, Korea

Opportunities for Coal-to-Gas in China  
Tai, M, Mott MacDonald (Beijing), China; Shaukat, A, Mott MacDonald, UK

Cluster and Bubble Characteristics in a Dual Circulating Fluidized Bed Reactor [Oral presentation]  
Seo, M W, Kim, S D, KAIST; Lee, S H, Choi, Y C, Korea Inst of Energy Research, Korea

CO2-Sorption Enhanced Reaction for the Production of High-Purity Hydrogen from Synthesis Gas Produced by Coal Gasification  

CFD Simulation of an Entrained-Flow Coal Gasifier for Coal IGCC Process  
Nguyen, T B, Lim, Y I, Hankyong National Univ; Song, B H, Kunsan National Univ; Kim, S M, Joo, Y J, Ahn, D H, Korea Electric Power Research Inst, Korea

Study of Optimal Operating Conditions in the Partitioned Fluidized Bed Gasifier Using a Commercial Simulator  
Park, Y C, Lee, S Y, Jo, S H, Moon, J H, Jin, G T, Korea Inst of Energy Research, Korea

A Study of the Gasification Characteristics in a Partitioned Fluidized Bed  

RENEWABLE ENERGY AND ENVIRONMENT SYMPOSIUM

10. REES I: Wind 1 (V. 1)
Monday June 21 10:30 303AB, 3F

Chair: Langen, I, Univ of Stavanger, Norway

Importance and Mitigation of Loading on Offshore Wind Turbines on Monopile Support Structures in Cases of Non-Availability  
Fischer T A, Kühn, M, Univ Stuttgart, Germany
Damage Caused by Typhoon and Design of Wind Turbine Towers
Jang, J J, Chien, C W, National Taiwan Ocean Univ, Taiwan, China

Static and Dynamic Analysis of Mono-Pile Foundation for Offshore Wind Farm
Zhang, J H, Sun, K, Zhang, L, Wang, Z Q, Harbin Engineering Univ; Hao, J, COOEC, China

Structural Feasibility Analysis of Oil Jacket platforms for Support Structures of Offshore Wind Turbines
Meng, X, Li, H J, Ocean Univ of China, China

Seismic Analysis of Offshore Wind Turbine Tower Structure Considering Pile-Soil-Slab Interaction
Liu, Z M, Du, C B, Hohai Univ; Ying, Z Q, Engineering Technology Research, China

Fundamental Structural Frequency Analysis for Jacket-Type Offshore Wind Turbine
Zhang, M, Li, H J, Ocean Univ of China, China; Hu, J S L, Univ of Rhode Island, USA

Fatigue Performance of Grouted Joints for Offshore Wind Energy Converters in Deeper Waters
Lochte-Holtgreven, S, Schaumann, P, Bechtel, A, Leibniz Univ Hannover, Germany

Integrated Fatigue Load Analysis of Wave and Wind
Zhao, J, Zhang, L, Zhang, X W, Harbin Engineering Univ, China

FEM Analysis on Tapered Roller Bearing at the Top of Vertical Axis Wind Turbine
Peng, P, COOEC, China

Scour around the Jacket Type of Offshore Wind Turbine Foundation in Shallow Water
Yang, R Y , Chen, H H, Hwung, H H, Jiang, W P, National Cheng Kung Univ, Taiwan, China

ARCTIC SCIENCE & TECHNOLOGY SYMPOSIUM

11. ARCTIC SCIENCE & TECH I: Pack Ice (V. 2)  305, 3F
Monday  June 21  10:30
Chair: Frederking, RMW, National Research Council, Canada
Co-Chair: Otsuka, N, North Japan Port Consultants, Japan

Capabilities of a Multi-Frequency Electromagnetic Sensor for Monitoring Arctic Pack Ice Properties
Holladay, S, Geosensors; Prinsenberg, S J, Peterson, I, Bedford Inst of Oceanography, Canada

Thin Ice Thickness Measured by ULS in a Marginal Sea
Su, J, Yang, B, Zhao, J F, Ocean Univ of China, China

Computational Investigation of New Icebreaking Method
Odinokov, V I, Prokudin, A N, Inst of Machine Science and Metallurgy, FEB RAS, Russia
Long Period Swells Break Up the Canadian Beaufort Sea Pack Ice in September 2009
Prinsenberg, S, Peterson, I, Bedford Inst of Oceanography; Barber, D, Asplin, M, Univ of Manitoba, Canada

Observation and Research on Air-Ice-Sea Interaction in the Antarctic Prydz Bay
Li, B R, Polar Research Inst of China; Fan, H M, State Oceanic Administration; Sun, B, Guo, J X, Cui, X B, Polar Research Inst of China, China

Ice Islands and Extreme Ice Features Drifting into the Beaufort Sea
Tiffin, S, CANATEC Associates International, Canada

MONDAY 13:00

Jin S Chung Award Lecture (IJOPE)
Monday June 21 13:00  311B, 3F
Interaction between Sea Ice and Various Materials Used in Offshore Structures
Saeki, H, President, Hokkaido Univ, Japan
Introduction by Moshagen, H, ISOPE president, Norway

12. LNG SLOSHING II: GTT (V. 3)
Monday June 21 14:00  310, 3F
Chair: Shin, Y, American Bureau of Shipping, USA

Local Influence of NO96 Raised Edges and MarkIII Corrugations on Sloshing Pressures in Tanks of LNG Membrane Vessels
Deschamps, G, Brosset, L, Gaztransport & Technigaz, France

Simulation of Liquid Impacts with a Two-phase Parallel SPH Model
Oger, G, Guilcher, P-M, HydrOcean; Brosset, L, Gaztransport & Technigaz; Jacquin, E, HydrOcean; Grenier, N, Le Touze, D, Ecole Centrale de Nantes, France

On the Effect of Phase Change on Impact Pressures due to Sloshing
Braeunig, J-P, INRIA Nancy; Brosset, L, GazTransport & Technigaz, France; Dias, F, ENS-Cachan, France/University College Dublin, Ireland/ Ghidaglia, J-M, ENS-Cachan, France

Validation of Numerical Tools for LNG Sloshing Assessment
Zheng, X, Maguire, J R, Radosavljevic, D, Lloyd’s Register EMEA, UK

Sensitivity Study of FE Models of LNG Containment System NO.96
Arswendy, A, Liasjo, O, Moan, T, NTNU, Norway

The Effect of Inner Steel Hull Flexibility on the Responses of the LNG Containment System NO.96 under Static Loads
Arswendy, A, Liasjo, O, Moan, T, NTNU, Norway
13. HYDRODYNAMICS II: Ocean Waves 2 (V. 3)
Monday June 21 14:00 311A, 3F

Chair: Naito, S, Osaka Univ, Japan

Intercomparison of Directional Wave Measurements from the Ekofisk Field in the North Sea
Krogstad, H E, NTNU; Barstow, S F, Lasse, L, Mathiesen, J P, Fugro OCEANOR, Norway

Extreme Wave Prediction Based on the Numerically Simulated Data in a Semi-enclosed Basin
Etemad-Shahidi, A, Moeini, M H, Chegini, V, Iran Univ of Science & Tech, Iran

The Various Components of the Circulation in the Regional Domain: Tidal, Wind and Eddy-driven Circulations and Their Relative Importances
Chen, H L, SMART Center, Singapore; Wei, J, MIT, USA; Pavel, T, National Univ of Singapore; Rizzoli, P, MIT, USA

The Application of GPS Height Data for Bathymetric Survey Analysis
Wen, C C, Su, D T, National Kaohsiung Marine Univ; Taiwan, China

Is Typhoon becoming Stronger?
Chen, H B, Jiang, Y P, Tianjin Research Inst for Water Transport Engineering, China

The Uncertainty Analysis of Input Parameter for Typhoon Storm Numerical Model
Liu, G L, Liu, D F, Xie, B T, Pang, L, Ocean Univ of China, China

Numerical Simulation and Analysis of Joint Multi-line to Defend Storm Surges Due to a Super Typhoon
Li, L Y, Zhu, X B, Qiantang River Administration; Huang, S C, Zhejiang Ins of Hydraulics & Estuary; Shi, Y H, Wu, X L, Qiantang River Administration, China

14. South China Sea I: MetOcean & Subsea 1 (V. 1)
Monday June 21 14:00 306AB, 3F

Chair: Cui, Y, COOEC, China

Highly Nonlinear Internal Solitary Waves and its Action on Cylindrical Piles in the Northwestern South China Sea
Xu, Z H, Yin, B S, Inst of Oceanology, CAS, China

Comparison of Wave Models SWAN and WAVWATCH III in Northern South China Sea
Jiang, L F, Zhang, Z X, Qi, Y Q, South China Sea Inst of Oceanology, CAS, China

Simulation of Potential Tsunami Hazards in the South China Sea for Assessing Impacts on Southern China
Pan, W L, Wang, S A, Cai, S Q, South China Sea Inst of Oceanology, CAS, China

Deep-water Bottom Current Research in the Northern South China Sea
Zheng, H B, Yan, P, Wang, Y L, South China Sea Inst of Oceanology, China

Application of SMS/RMA2 Model to the Numerical Simulation of Zhanjiang Harbor Tidal Current
Yin, Y, Qi, Y Q, Mao, Q W, Tong, J Q, South China Sea Inst of Oceanology, China

Simulating the Sandwaves Moving with a Ultra-High Resolution Three Dimensional Hydrodynamic Model
Lin, M, Jiang, W B, Inst of Mechanics, CAS, China

Global Performance Analysis of Spar in the Extreme Condition of South China Sea
Li, X Z, Xie, B, Wang, S S, CNOOC, China; Li, J X, Ye, W, Ran, Z H, Ocean Dynamics, China

15. SBD II: Materials (V. 4)
Monday June 22 14:00 307AB, 3F
Chair: Tsuru, E, Nippon Steel, Japan
Co-Chair: Jin, HW, ExxonMobil Research & Engineering, USA

Pipeline Coating Selection Process - Current Trends
Surkein, M B, LaFontaine, J P, ExxonMobil Development, USA

Investigation on Strain-age of Large Diameter and Thick Wall X80 Grade Cold Bending Pipe
Chi, Q, Tubular Goods Research Center, CNPC, China

Effects of Straining and Heating on Dislocation Behavior and Solute Carbon Distribution in SBD X100 Linepipe Steels
Kang, J S, POSCO; Park, H S, POSTECH; Yoo, J Y, Se, D H, Chun, S H, POSCO; Park, C G, POSTECH, Korea

Anisotropic Damage Behavior in High Strength Steel Line Pipes
Shinohara, Y, Mines ParisTech, France; Madi, Y, Nippon Steel, Japan; Besson, J, Mines ParisTech, France

Strain Rate Effect on Toughness Requirements for Pipeline Strain Based Design
De Pari Jr, L, Zettelmoyer, N, Monahan, C, Newbury, B, ExxonMobil Development, USA

The Effect of Weld Metal Mismatch Level on Failure Mode in Small-scale SENT Testing of an X80 Material
Østby, E, Nyhus, B, Kane, P-A, SINTEF Materials and Chemistry; Thaulow, C, NTNU, Norway

Determination of Pipe Girth Weld Fracture Toughness Using SENT Specimens
Pisarski, H G, TWI, UK

Effect of Reeling Strain on Sulfide Stress Cracking Resistance of X65 Linepipe and Girth Welds
Monahan, C C, Pickens, G, Noecker, R, Dunn, G, ExxonMobil Development; Darcis, P, Izquierdo, A, Quintanilla, H, TenarisTamsa, Mexico; Jones, R, Subsea7, UK

16. NANOMATERIALS II: Biomedical and Energy Materials (V. 4)
**Monday June 21 14:00**

**Chair:** Fabris, L, Rutgers Univ, USA  
**Co-Chair:** Chow, GM, National Univ of Singapore, Singapore

**The Control of Growth and Differentiation of Cells with Physical Interaction**  
Ellis-Behnke, R G, Liang, Y X, Cheung, S W H, Tay, D K C, MIT, USA

**Nanotechnology and Biomedicine at the Cross Roads**  
Tsakalakos, T, Rutgers Univ, USA

**Nanostructured Surfaces: Organising Atoms, Nanoparticles and Proteins to Create Functional Architectures [Oral presentation]**  
Palmer, R E, Univ of Birmingham, UK

**Biomimetic Morphogenesis and Nano-Composite Structure of Calcite Statoliths (Otoconia): An Approach towards Deeper Understanding of a Bio-Sensor and its Function**  
Kniep, R, Max-Planck-Inst fur Chemische Physik fester Stoffe, Germany

**Biomimetic Platform to Design & Synthesize Nanobiomaterials for Tissue Engineering**  
Sinha, A, National Metallurgical Laboratory, India

**Nanoscience for Innovative Dye Sensitized Solar Cells**  
Vomiero, A, Concina, I, Ferroni, M, Faglia, G, Sberveglieri, Univ of Brescia, Italy

**Magnetic Nanoparticles for Biomedical Applications**  
Kurihara, L, Naval Research Laboratory, USA

**Graphite-Based Nanostructures for Photonic Applications**  
Obraztsova, E D, Rybin, M G, Obraztsov, P A, A M Prokhorov General Physcis Inst, Russia; Svirko, Y P, Univ of Eastern Finland, Finland

**Modern Catalytic Nanotechnologies for Sustainable Chemistry and Environmental Protection**  
Sulman, E, Tver Tech Univ, Russia

**Nanostructured Materials Challenges toward Intermediate Temperatures Solid Oxide Fuel Cells**  
Pergolesi, D, Fabbri, E, Traversa, E, National Inst for Materials Science, Japan

**Nanostructured Materials for Energy Application**  
Mamoun, M, KTH Royal Inst of Tech, Sweden

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**17. VORTEX-INDUCED VIBRATIONS II (V. 3)**  
**Monday June 21 14:00**

**Chair:** Etienne, S, Ecole Polytechnique de Montreal, Canada  
**Co-Chair:** Wu, YX, Inst of Mechanics, CAS, China

**An Experimental Correlation Length Evaluation for Flexible Marine Riser in Transverse Flow**  
Gu, J J, COPPE/UFRJ, Brazil; Duan, M L, China Univ of Petroleum, China; Pinto, W T, Univ of Rio Grande; Levi, C A, COPPE/UFRJ, Brazil
Experimental Study of Vortex-Induced-Vibration in Two Degrees of Freedom on a Spring-Mounted Circular Cylinder near the Rigid Plane
Valizadeh, R, Mostafa Gharabaghi, A R, Karim, A, Sahand Univ of Tech, Iran

Reexamination of the Lift on a Circular Cylinder in Uniform Shear Flow
Zhang, Q H, Chen, T Q, Tianjin Univ, China

Parameter Analysis of Vortex-induced Vibrations through Numerical Simulation
He, C J, Duan, Z D, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

Two-Degree-of-Freedom Vortex Induced Vibrations with Different Mass Ratios
Tang, S Z, Huang, W P, Deng, Y, Liu, J J, Ocean Univ of China

Experimental Investigation of VIV Responses of Long Flexible Risers Towed Horizontally in a Wave Basin
Song, J, Lu, L, Teng, B, Wu, H, Tang, G Q, Zhang, J Q, Gou, Y, Li, G W, Dalian Univ of Tech, China

Case Study of Vortex-induced Motions (VIM) of a Monocolumn Platform Applying the Hilbert-Huang Transform Method
Gongalves, R T, Franzini, G R, Rosetti, G F, Fujarra, A L C, Nishimoto, K, Univ of Sao Paulo, Brazil

Determination of Minimum Miscibility Pressure Using Vanishing Interfacial Tension (VIT) in Support of EOR for Alaska North Slope (ANS) Heavy Oil
Dandekar, A Y, Tathed, V, Patil, S L, Univ of Alaska Fairbanks, USA

Study on the Phase Inversion Characteristics of Heavy Oil Emulsion
Jing, J Q, Duan, L L, Wang, J Z, Southwest Petroleum Univ; Huang, X F, CNOOC Energy Development; Tang, M, COOEC, China

Isolation Identification and Characteristics of Lignocelluloses Degrading Fungus L4
Wang, J, China Univ of Petroleum, China

Investigation of Foam Properties and its Action on the Viscosity Reduction of Heavy Oil
Jing, J Q, Southwest Petroleum Univ, China

The Effect of Pressure on Wax Disappearance Temperature and Wax Appearance Temperature
Li, H Y, Beijing Inst of Petrochemical Tech; Gong, J, China Univ of Petroleum, China

Study on the Vapor-Liquid-Solid Three-phase Thermodynamic Model for Prediction of Asphaltene Deposition
Xiang, M, Gong, J, China Univ of Petroleum, China
Study on the Quantitative Characterization Method of Wax Crystals Based on Fractal Theories
Jing, J Q, Lu, P, Southwest Petroleum Univ; Liao, I Y, CNOOC; Run, C S, Southwest Petroleum Univ; Fang, J, Sichuan Natural Gas East Transportation, China

19. REES II: Wind 2 (V. 1)
Monday June 21 14:00 303AB, 3F
Chair: Yang, R-Y, National Cheng Kung Univ, Taiwan, China

Practical Simulation on Motions of a TLP-Type Support Structure for Offshore Wind Turbines
Jagdale, S, Ma, Q W, City Univ, UK

Aeroelastic Behavior of Offshore Wind Turbine Airfoil during Typhoon
Ren, N X, Ou, J P, Dalian Univ of Tech; He, C J, Harbin Inst of Tech, China

Dynamic Response Analysis for a Floating Offshore Wind Turbine in Deep Water
Li, Y G, Kang, H G, Ou, J P, Dalian Univ of Tech, China

Hydrodynamics Meet Wind Turbines: Specification and Development of a Simulation Tool for Floating Wind Turbines with Object-oriented Modelica
Quesnel, L, Vorpahl, F, Blunk, M, Busmann, H-G, IWES Fraunhofer, Germany

Superelement Approach in Fully-coupled Offshore Wind Turbine Simulation: Influence of the Detailed Support Structure Modelling on Simulation Results for a 5-MW Turbine on a Tripod Substructure

Motion Analysis of 5Mw Floating Wind Turbine
Shin, H K, Kim, K M, Choi, S H, Univ of Ulsan, Korea

20. ARCTIC SCIENCE & TECH II: Ice Process & Ice-Structure Interactions 1 (V. 2)
Monday June 21 14:00 305, 3F
Chair: Gudoshnikov, AARI, Russia
Co-Chair: Tang, C, Bedford Inst of Oceanography, Canada

Confined Compression Test on Sea Ice of Bohai Sea
Guo, F W, Sun, Q, Yue, Q J, Dalian Univ of Tech, China

An Efficient EG/AD Model Ice for the MOERI Ice Tank
Cho, S R, Lee, C J, Jeong, S Y, MOERI/KORDI, Korea

Modified Discrete Element Model for Sea Ice Dynamics
Ji, S Y, Wang, A L, Yue, Q J, Dalian Univ of Tech, China
PIV Measurement of Flow Velocity Field under Modeled Ice Floe
Lu, P, Li, Z J, Zhang, Q, Dalian Univ of Tech, China

Classical and Non-linear Mechanical Processes in the Arctic Sea-Ice Cover
Chmel, A, Ioffe Physico-Technical Inst; Smirnov, V, Sheykin, I, AARI, Russia

Mathematical Model of Ice Sheet Deformation Caused by Submarine Motion
Kozin, V M, Zemlyak, V L, Chizhiumov, S D, Komsomol-ka-Amur State Tech Univ, Russia

Direct Ice Force Measurement of Cylindrical Structure
Wang, Y L, Yue, Q J, Bi, X J, Dalian Univ of Tech, China

Model Test for Studying Ice Force on Jack-up Structure
Guo, F W, Yue, Q J, Xu, N, Dalian Univ of Tech, China; Rimer, S, Central Michigan Univ, USA; Wang, Y H, Dalian Univ of Tech, China

Mitigation Methods of Ice-induced Vibration for Jacket Offshore Platforms
Li, D Q, Dalian Univ of Tech, China

Smart Control Tests and Analyses of Ice-induced Vibration Control of Offshore Platform
Zhang, J, Qingdao Univ of Tech, China

MONDAY 16:20

21. LNG SLOSHING III: Sloshel (V. 3)  
Monday  
June 21, 16:20  
310, 3F

Chair: Brosset, L, GazTransport & Technigaz, France

Sloshing and Scaling: Experimental Study in a Wave Canal at Two Different Scales
Kimmoun, O, Ecole Centrale Marseille; Ratouis, A, Brosset, L, GazTransport & Technigaz, France

Advances in Sloshing Assessment from the Sloshel Project
Bogaert, H, Kaminski, M, MARIN, The Netherlands

Sloshing and Scaling: Results from Sloshel project
Bogaert, H, MARIN, The Netherlands; Léonard, S, GazTransport & Technigaz, France; Kaminski, M, MARIN, The Netherlands; Brosset, L, GazTransport & Technigaz, France

Hydro-structural Behavior of LNG Containment Systems under Breaking Wave Impacts: Findings from the Sloshel Project.
Bogaert, H, MARIN, The Netherlands; Léonard, S, Marhem, M, Loelère, G, GazTransport & Technigaz, France; Kaminski, M, MARIN, The Netherlands

Interaction between Wave Impacts and Corrugations of MarkIII Membrane: Findings from the Sloshel Project
Bogaert, H, Kaminski, M, MARIN, The Netherlands; Brosset, L, GazTransport & Technigaz, France
22. HYDRODYNAMICS III: Ocean Waves 3 (V. 3)
Monday  
June 21  
16:20  
311A, 3F

Chair: Chien, L-K, National Taiwan Ocean Univ, Taiwan, China

Sea Level Variation of the North Pacific Ocean during the 1997/98 El Nino Event
Li, Y F, Ocean Univ of China; Chen, M X, Zuo, J C, Hohai Univ, China

Storm Surge Due to Violent Typhoons 0814 (Hagupit) and 9615 (Sally) - An Integrated Storm Surge Model Approach
Tai, J, Zhang, C K, Hohai Univ, China

Effects of Sea Surface Roughness Parameterization on Tropical Cyclone in the Coupled Atmosphere-Wave-Ocean Model
Zhang, J F, Huang, L W, Wen, Y Q, Deng, J, Wuhan Univ of Tech, China

Predicting Inundation and Run-up due to a Tsunami Using Smoothed Particle Hydrodynamics
Prakash, M, Pereira, G G, Cleary, P W, CSIRO, Australia

The Study of Establishment of GIS Information System for Coastal Typhoon Disaster Prevention
Chien, L K, Feng, T S, Huang, Y T, National Taiwan Ocean Univ, Taiwan, China

Numerical Simulation of Hydrology and Sediment Transport during a Typhoon Storm Surge in the Yangshan Harbor, China
Zuo, S H, Zhang, Z, Li, B, Tianjin Research Inst of Water Transport Engineering; Zhu, Z X, Shanghai Jiao Tong Univ, China

Surface and Subsurface Variations during Indian Ocean Dipole Events
Sun, S W, Lan, J, Wang, Y, Ocean Univ of China, China

Interannual Variabilities of the Cold Eddy in the East China Sea
Wang, G, Lan, J, Wang, Y, Ocean Univ of China, China

Preliminary Study on Relationship between Typhoon Wave Data and Surge at Hua-Lien Water
Lee, B C, Huang, C C, Chang, H M, Huafan Univ, Taiwan, China

23. Deepwater Installation II (V. 1)
Monday  
June 21  
16:20  
311B, 3F

Chair: Teigen, p, Statoil, Norway
Co-Chair: Li, X, CNOOC, China

Field Pilot of Deep Water Lifting in Two-fall Configuration Using FRDS
Torben, S, Ingeberg, P, ODIM; Teigen, Statoil, Norway

PLET Installation in Deepwater Based on Tension Control and Length Control
Wang, H, He, N, Wang, B, COOEC, China

Time Domain Coupled Analysis of Deepwater Pipeline Laying System
Zhang, X F, Zhang, W S, Yue, Q J, Dalian Univ of Tech; Li, Z G, Li, X, COOEC, China
The Challenges of Flexible Pipe and Umbilical Installation in Deepwater
Ji, A, Diao, W G, Huang, K, Deeptech, USA

Preliminary Study on Dual-Barge Float-Over Installation Method for Large Blocks
Yang, X G, COOEC; Zhang, J J, Fudan Univ; Duan, M L, Su, N N, Chen, B M, China Univ of Petroleum; Yu, H, COOEC, China

Dynamic Analysis of the Topside Floatover Installation
Fan, J, Peng, J H, Shanghai Jiao Tong Univ; Wang, M L, COOEC; Miao, G P, Shanghai Jiao Tong Univ, China

Introducing Installation Methods of the Jacket Riser
Yang, J J, Zhou, C W, COOEC; Zhao, Y, Tianjin Heli Oil & Gas Tech, China

The Finite Element Model of Deepwater Risers during Installation
Duan, M L, Lee, N, Chen, J H, China Univ of Petroleum, China

Application Prospect of Sub-sea Production System in Deepwater Oilfield Development in South China Sea
Wu, H Z, COOEC, China

Application and Method of Deepwater Drilling by ASDD in South China Sea
Guo, Y F, Ji, S J, Tang, C Q, China Oilfield Services Ltd, China

An Application of the Coupled Time Domain Analysis Technique to Floating System with Environmental Conditions of South China Sea
Zhou, L, Sun, Z, Yang, X G, COOEC, China

Dynamic Analysis on Truncated Mooring Line Using Numerical Simulation and Model Test
Qiao, D S, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

The First Use of Pipeline Plough on Subsea Pipeline Trenching in South China Sea
Deng, H F, COOEC Shenzhen Subsea Technology; Luan, G, Bluewater Offshore Engineering Technology; Song, C, COOEC Shenzhen Subsea Technology, China

The Prospect of the Flexible Pipe Application in South China Sea
Diao, W G, Huang, K, Ji, A, Deeptech, USA

Research of Conductor Setting Depth using Jetting in the Surface of Deepwater
Yang, J, Liu, S J, China Univ of Petroleum, China

Study on Simplified Fatigue Assessment Method for Semi-submersible Rig in South China Sea
Xie, W H, Xie, B, CNOOC, China

24. South China Sea II: MetOcean & Subsea 2 (V. 1)
Monday June 21 16:20

Chair: Qi, Y Q, South China Sea Inst of Oceanology, China

Application and Method of Deepwater Drilling by ASDD in South China Sea
Guo, Y F, Ji, S J, Tang, C Q, China Oilfield Services Ltd, China

An Application of the Coupled Time Domain Analysis Technique to Floating System with Environmental Conditions of South China Sea
Zhou, L, Sun, Z, Yang, X G, COOEC, China

Dynamic Analysis on Truncated Mooring Line Using Numerical Simulation and Model Test
Qiao, D S, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

The First Use of Pipeline Plough on Subsea Pipeline Trenching in South China Sea
Deng, H F, COOEC Shenzhen Subsea Technology; Luan, G, Bluewater Offshore Engineering Technology; Song, C, COOEC Shenzhen Subsea Technology, China

The Prospect of the Flexible Pipe Application in South China Sea
Diao, W G, Huang, K, Ji, A, Deeptech, USA

Research of Conductor Setting Depth using Jetting in the Surface of Deepwater
Yang, J, Liu, S J, China Univ of Petroleum, China

Study on Simplified Fatigue Assessment Method for Semi-submersible Rig in South China Sea
Xie, W H, Xie, B, CNOOC, China

25. SBD III: Strain Capacity (V. 4)
Monday June 22 16:20 307AB, 3F

Chair: Newbury, BD, ExxonMobil Development, USA
Co-Chair: Hara, T, Nippon Steel, Japan

Keynote Paper

Strain-based Design: Recent Developments
Kan, W C, ExxonMobil Development Co., USA

The Concepts for Strain-Based Design for Pipeline
Gao, H, Yu, Z F, Shi, H, Zhang, Z Y, China Petroleum Pipeline Engineering, China

Deformability and Arrestance of API Grade X60 To X70 Line Pipe with Dual Phase Microstructure
Hara, T, Shinohara, Y, Terada, Y, Asahi, H, Doi, N, Nippon Steel, Japan

Tensile Strain Capacity of X80 Pipe in Full Scale Test
Igi, S, Sakimoto, T, JEF Steel, Japan

Full Scale Bend Testing of Strain Based Designed High Grade Buried Gas Pipeline
Mannucci, G, Lucci, A, Centro Sviluppo Materiali; Spinelli, C M, ENI Gas & Power; Baldi, A, Mascia, G, Univ of Cagliari, Italy

Interaction between the Undersea Pipeline and the Landing Position
Xu, Y F, Wang, J H, Zhou, X L, Ye, G L, Shanghai Jiao Tong Univ, China

Evaluation of Compressive Strain Limit of X80 SAW Pipes for Resistance to Ground Movement
Shitamoto, H, Hamada, M, Okaguchi, S, Takahashi, N, Takeuchi, I, Sumitomo Metal Industries; Fujita, S, Sumitomo Metal Pipeline & Piping, Japan

The Potential Limit of Compressive and Global Strain Considering Thermal Aging and Manufacturing Strength Range
Tsuru, E, Agata, J, Shinohara, Y, Nippon Steel, Japan

26. NANOMATERIALS III: Applications 2 (V. 4)
Monday June 21 16:20 308, 3F

Chair: Morris, JW, Univ of California-Berkeley, USA
Co-Chair: Wang, J, National Univ of Singapore, Singapore

Size and Surface Effects of NaYF4 Upconversion Nanophosphors
Chow, G M, National Univ of Singapore, Singapore

Nanostructured Coatings - Potential Petrochemical Applications
Kim, G, Perpetual Technologies, Canada

Use of the Nanocomposite Concept for Improving the Tribological Behavior of Me-C:H Sputtered Coatings in Lubricated Contact
Cavaleiro, A, Univ of Coimbra, Portugal; Polcar, T, Czech Tech Univ Prague, Czech Republic

The Ultra Low Gas Detection Limits of Metal Oxide Sensor Devices
Kiriakidis, G, Moschovis, K, Kortidis, J, IESL/FORTH, Greece
Multifunctional Nanocomposites for Offshore Wind Turbine Blades: Materials, Processing and Performance
Gou, J H, Univ of Central Florida, USA

Akdogan, E K, Ignatov, A, Croft, M, Tsakalakos, T, Rutgers Univ, USA

In Situ HREM Study on Sublimation-induced Phase Change in Nanometer-sized Gold and Silver Particles
Lee, J G, Korea Inst of Materials Science, Korea; Chen, C L, Osaka Univ, Japan; Choi, C J, Korea Inst of Materials Science, Korea; Mori, H, Osaka Univ, Japan

Investigations of Nanomaterials Using Nuclear and Electron Spin Resonance Spectroscopy Methods
Ramasamy, S, Anna Univ, India

Non-oxide Nanomaterials Dispersed Ceramics and Polymer
Kusunose, T, Osaka Univ; Sekino, T, Tohoku Univ; Niihara, K, Nagaoka Univ of Tech, Japan

R&D of Bulk Nanostructured Materials Processed by SPD for Innovative Applications
Valiev, R Z, Ufa State Aviation Tech Univ, Russia

Cobalt-based Nanostructured Coatings
Provenzano, V, National Inst of Standards, USA

Molecular Dynamics Simulations of the Sputtering Process of beta-SiC and Thin Film Growth of SiC on Silicon
Prskalo, A-P, Schmauder, S, Univ Stuttgart; Ziebert, C, Ulrich, S, Ye, J, Karlsruhe Inst of Tech, Germany

Fe-Based Nanocrystalline Soft-Magnetic Alloys with Low Core Loss and High Curie Temperature

Microstructure-property Relations in Nanocrystalline Materials: Building a Quantitative Link
Li, M, Georgia Inst of Technology, USA

27. VORTEX-INDUCED VIBRATIONS III (V. 3)
Monday June 21 16:20 301AB, 3F
Chair: Qiu, W, Memorial Univ of Newfoundland, Canada

Flexible Riser VIV Simulation in Uniform Current
Chen, H C, Huang, K, Chen, C R, Texas A&M Univ, USA

Numerical Study of Vortex-induced Vibration Related to Flexible Risers
Chen, Z S, Kim, W J, Mokpo National Univ, Korea

Finite Element Analysis of Vortex Induced Vibration of Flexible Hose in Deep Ocean Mining
Wang, Z, Ra, Q H, Liu, S J, Central South Univ, China
Investigation on the Pipe-soil Interaction for Spanning Pipelines during Vortex Induced Vibration
Zhao, T F, Feng, H, Duan, M L, China Univ of Petroleum; Zhong, H, CNOOC; Yang, Y, China Univ of Petroleum; Tong, H, Fudan Univ, China

The Effect of Non-linear Mooring Stiffness on the Vortex-induced Motion of Cylindrical Structures
Stappenbelt, B, Univ of Wollongong, Australia

Multi-Mode Responses of Subsea Pipeline Subjected to Vortex Induced Vibration
Guan, J, IKM Ocean Design, Norway

The Vortex-Induced Vibration of Marine Riser Connected to Floating System with Heave and Lateral Motions
Lou, M, China Univ of Petroleum; Dong, W Y, COOEC; Wang, B, China Univ of Petroleum, China

VIV Analysis of Flexible Riser with Different Simulation Methodologies
Zhang, Y Q, Tan, Z, Ma, F, Wellstream International, USA

An Engineering Study to Investigate Methane Hydrate Resource Potential Associated with Barrow Gas Fields, Alaska
Dandekar, A Y, Singh, P, Patil, S L, Univ of Alaska Fairbanks, USA

Instability of Seabed and Pipes Induced by NGH Dissociation
Lu, X B, Inst of Mechanics, CAS; Li, Q P, China Ocean Oil; Wang, L, Wang, S Y, Inst of Mechanics, CAS, China

Enhanced CO2 Geological Storage System using Gas Hydrates and Environmental Risk Assessment
Komai, T, Sakamoto, Y, Tanaka, A, National Inst of AIST, Japan

Pathway of Fluid Migration for Gas Hydrate in the Accretionary Wedge of Manila Subduction Zone, Northeastern South China Sea
Wu, N Y, Chen, Z H, Guangzhou Inst of Energy Conversion, CAS; Li, J B, State Oceanic Administration, China

The Scaling Criteria and their Sensitivity Analyses of Gas Production from Hydrate Reservoir by Depressurization
Bai, Y H, Li, Q P, CNOOC, China

Experimental Studies of Natural Gas Hydrate Formation and Dissociation in Porous Media with the 2D Experimental System
Du, Y, Zhejiang Ocean Univ; Feng, Z P, Guangzhou Inst of Energy Conversion, CAS, China

Effect of Confining Pressure on Mechanical Properties of Artificial Methane Hydrate Bearing Sediments
Miyazaki, K, National Inst of AIST; Yamaguchi, T, Toho Univ; Sakamoto, Y, Tenma, N, Ogata, Y, Aoki, K, National Inst of AIST, Japan
Study on Flow Friction of Hydrate Slurry under Water-in-Oil Emulsions Condition
Li, W Q, Gong, J, Zhao, J K, China Univ of Petroleum, China

The Studies of the Depressurization Development Method of the Natural Gas Hydrate
Li, Q P, CNOOC; Li, S X, China Univ of Petroleum; Bai, Y H, Yao, H Y, CNOOC, China

Development of the Adaptive Insulation Pressure Corer for Exploring Natural Gas Hydrates
Xu, J L, B, W S, Zhu, J R, Ren, H, Shengli Petroleum Administration, China

Field Test of Straight-bladed Vertical Axis Wind Turbine with a Directed Guide Vane Row
Takao, M, Fujitani, K, Takita, H, Matsue College of Tech, Japan

Assessment Methods for Dynamic Characteristics of Offshore Wind Turbines
Thönns, S, BAM Berlin; Kraemer, P, Univ of Siegen; Rücker, W, BAM Berlin; Fritzen, C-P, Univ of Siegen, Germany

Experimental Study of a New Wind Energy Collecting System
Sun, Z J, Tang, Z B, Zhejiang Ocean Univ; China

Aeroelastic Behavior of Offshore Wind Turbine Airfoil during Typhoon
Ren, N X, Ou, J P, Dalian Univ of Tech; He, C J, Harbin Inst of Tech, China

Development and Application of Two Methods for Optimal Wind Farm Siting: Technology Development Index and Cluster Analysis
Grilli, A R, Spaulding, M, Damon, C, Univ of Rhode Island, USA

Numerical Simulation of Power Production in Different Meteocean Condition in an Offshore Wind Turbine Application
Sasongko, N A, Kalvig, S M, Univ of Stavanger; Mahmoudi, J, Univ of Stavanger/International Research Inst of Stavanger, Norway

A Three Dimensional Numerical Method to Study Aerodynamic Performance of Horizontal Axis Wind Turbine
Ye, X R, Zhang, L, Sheng, Q H, Harbin Engineering Univ, China

Numerical Simulation of Zero-head Vertical-axis Turbine with Inertial Force System
Zhang, L, Jing, F M, Jiao, L, Zhang, X W, Harbin Engineering Univ, China

Ice loading on Ships in Discontinuous Ice

Chair: Yue, QJ, Dalian Univ of Technology, China
Co-Chair: Judson, B, BMT Fleet Technology, Canada
Frederking, R, National Research Council, Canada

Time-dependent Reliability of Ageing Platform in Ice Zone
Chen, T H, Chen, G M, China Univ of Petroleum, China

Floating Production Unit Resistance to Iceberg Impact
Karlnsky, S L, Chernetsov, V A, SOE Rubin CDB/ME, Russia

Effect of Adding Ice Breaking Cone to Mitigating Ice-induced Vibrations
Xu, N, Yue, Q J, Li, D Q, Dalian Univ of Tech, China; Liebowicz, B, Harvard Univ, USA

Simultaneous Ice Crushing Failure on Narrow and Compliant Structures
Yue, Q J, Guo, F W, Wang, Y H, Dalian Univ of Tech, China

Structural Ice-resistant Performance Analysis of Offshore Bucket Foundation Platforms with a Single Pillar
Zhang, D Y, Yue, Q J, Wang, S Y, Dalian Univ of Tech, China; Brindle, A, Tufts Univ, USA

Evaluation of Wave Induced Ice-Structure Impact Forces in Ice-Infested Areas
Teigen, P, Gürtner, A, Statoil, Norway

Local Ice Crushing Resistance of OPEN CELL SHEET PILE© Wall
Braun, K, PND Engineers; Li, G, BP; Hudson, B, Bai, F F, PND Engineers, USA

The Distribution of the Ice-induced Fatigue Damage for Ice Zone Platform Based on Time Domain Analysis
Yang, D P, Chen, G M, China Univ of Petroleum, China

Physical and Mechanical Properties of Modelling Ice for Investigation of Abrasion Process on Ice-resistant Offshore Platforms

Design and Application of Slots Used for Marginal Field Development in Heavy Ice Conditions in Bohai
Wang, Y, Dalian Univ of Tech; Duan, M L, China Univ of Petroleum; Hou, J L, Dalian Univ of Tech; Li, X Z, CNOOC, China

**TUESDAY 08:00**

31. LNG SLOSHING IV: Physics 1 (V. 3)
Tuesday June 22 08:00 310, 3F

Chair: Dias, F, University College Dublin, Ireland

Three-dimensional Shallow Water Sloshing in a Rotating-Translating Vessel
Ardakani, H A, Bridges, T J, Univ of Surrey, UK

Impact of a Falling Jet
Christodoulides, P, Cyprus Univ of Tech, Cyprus; Dias, F, University College Dublin, Ireland/ENS-Cachan, France; Ghidaglia, J-M, Kjerland, M, ENS-Cachan, France

Experimental Study of Evolution of Impact Pressure along the Walls of a Sloshing Tank
Repaile, N, Pistani, F, Thiagarajan, K, Univ of Western Australia, Australia

Study for the Influence of Excitation Frequency on Slosh-induced Impact Pressures of LNG Tanks
Cai, Z H, Wang, D Y , Li, Z, Shanghai Jiao Tong Univ, China

Coupling of Sloshing in Liquid Tank and Ship Motion
He, Z, Zhu, R C, Li, C C, Miao, G P, Shanghai Jiao Tong Univ, China

A Study on Flow Field around Membrane Corrugation
Kwak, D W, Chung, J Y , Kwon, S H, Oh, S H, Pusan National Univ, Korea

Investigation of Air Cavity Impacts in Sloshing Through Numerical Models and Experiments
Abrahamsen, B C, Faltinsen, O M, NTNU, Norway

32. HYDRODYNAMICS IV: Ocean Waves 4 (V. 3)
Tuesday June 22 08:00 311A, 3F
Chair: Zang, J, Univ of Bath, UK

Wave Age Retrieval from SAR Images around Coastal Seas
Sun, J, Ocean Univ of China, China

A Semi-empirical SAR Wave Height Retrieval Algorithm and Preliminary Validation
Wang, H, National Ocean Technology Center; Yang, J S, State Oceanic Administration; Li, T J, National Ocean Technology Center, China

A Combined Empirical Decomposition and Zero-Up-Crossing Method on Ocean Wave Analysis
Lin, J G, National Taiwan Ocean Univ; Lin, Y F, Dahan Inst of Tech; Hsu, S Y, National Taiwan Ocean Univ, Taiwan, China

Improvements of Amplifier Circuit of CTD in Offshore Measurement
Ren, D H, Liu, J B, HangZhou DianZi Univ, China

Risk Assessment of Infrastructures in Pearl River Delta by Typhoon Attacks
Han, F T, Liu, D F, Xie, B T, Ocean Univ of China, China

Storm Surge Disaster Zoning along South-east Coasts of China
Pang, L, Ocean Univ of China; Ma, H R, Sinopec Safety Engineering Inst of Qingdao; Wang, S Q, Liu, D F, Ocean Univ of China, China

Speckle Noise Reduction in SAR Ocean Applications
Fan, K G, Lin, H, Chinese Univ of Hong Kong, China

33. Deepwater Installation III (V. 1)
Tuesday June 22 08:00 311B, 3F
Chair: Wu, H, COSL, China
VersaTruss Float-Over Topside Installation in Al-KHAFJI Filed Development Project
Yu, S, Zhong, Z Y, VersaMarine Engineering; Greeves, J, VersaBar, USA

Technology Assessment of Deepwater Pipelay Systems
Ma, C, Zhuang, Y F, COOEC Shenzhen Subsea Technology; Dui, W B, COOEC Maintenance, China

Dynamics of Pipelines Towed By Snake Lay Technology
Nikkhaah, A, Baghernejad, M, SLT-Engineering, Malaysia

Development of a New Type Installation System for Deepwater Risers and Subsea Hardware
Li, Z G, CNOOC; Li, L, Duan, M L, China Univ of Petroleum; He, N, Wang, Y, Dalian Univ of Tech, China

Critical Hydraulic Gradient of Piping in Sand
Zhang, J H, Jiang, S B, Tsinghua Univ, China

Optimizing Subsea Gravity Separator Structural Design by Analysis for Deepwater Project
Ding, W B, Li, Z G, Liu, P L, COOEC, China

Numerical Study on Batch Pipelining of Hot Crudes with Off-take
Wang, K, Li, Q P, CNOOC; Yu, B, China Univ of Petroleum, China

Investigation on a New Kind of Offshore Pipe-type Separator
Wang, L Y, Zeng, H, CNPC Offshore Engineering, China

Assessment of Numerical Models for the Simulation of Installation Procedures for Subsea Equipments
Ramaiitho, F S, Corrja, F N, Jacob, B P, COPPE/UFRJ, Brazil

Study on Mechanism and Control Methods of Water Hammer in Pump Station and Pipe Lines
Asadi Niazi, M, Mokallaf, E, Ardabil Regional Water, Iran

CP System Design for Flowlines with Direct Electrical Heating
Lauvatad, G X, Reinertsen AS, Norway

Multi-Core Submarine Power Cable for Mixed High and How Voltage Transmission
Liu, J E, Yang, Y, Liu, J S, COOEC, China

High-performance Steels for Energy Exploration
Steinbeck, G, Kern, A, ThyssenKrupp Steel Europe, Germany

Development of 3Cr Steels with Low Cost and Good CO2 Corrosion Resistant Properties
Xu, M X, Zhang, L, Wang, J, Univ of Science and Technology Beijing; Chang, W, CNOOC; Zhang, Z H, Baoshan Iron and Steel, China

The Effects of Microscopic Metallurgical Factors on Macroscopic Deformation Properties in Dual Phase Steels
Shimamura, J, Ishikawa, N, Sueyoshi, H, Mitao, S, JFE Steel, Japan; van Rassel, J, Univ of Waterloo, Canada

Development of Advanced Linepipe Steels at POSCO
Seo, D H, Chon, S H, Yoo, J Y, Kang, K B, POSCO, Korea

Mechanical Properties after Full-scale Reeling Simulation of X65 Equivalent Grade Seamless Pipe
Higuchi, K, Shitamoto, H, Sumitomo Metal Industries, Japan

Mid Thickness Delayed Cracking of Z-Quality Offshore Steel
Gräberg, S V, Paauw, A J, Reinertsen AS; Volden, L, Statoil, Norway

EBSD Study on Transverse Tensile Deformation of X80 Linepipe
Ji, L K, Li, Y, Tubular Goods Research Centre, CNPC; Li, M, Univ of Science & Tech Beijing; Huo, C Y, Feng, Y R, Tubular Goods Research Centre, CNPC, China

Numerical Analysis for Wrinkling of Large T Section When Bending
Zhang, W H, Mao, Y S, Wuhan Univ of Tech, China

36. NANOMATERIALS IV: Processing (V. 4)
Tuesday June 22 08:00 308, 3F
Chair: Ellis-Behnke, RG, MIT, USA
Co-Chair: Ramasamy, S, Anna Univ, India

Hybrid Nanoparticle Assemblies: Synthesis, Stability and Applications
Fabris, L, Mark, P, Paladini, B J, Berke, B S, Rutgers Univ, USA

Flow Behavior of Nanopowder Suspensions
Akinc, M, Iowa State Univ, USA

On the Conversion of Bulk Polycrystalline Y2O3 into the Nanocrystalline State
Kear, B H, Al-Sharab, J F, Deutsch, S, Rutgers Univ; Voronov, O A, Diamond Materials, USA

Electrospinning EPDM Oil Sorption Fiber: Effect of Solution Flow Rate
Liu, Y P, Zhejiang Ocean Univ; Zhou, M H, Donghua Univ, China

Interference Lithographically Defined, Large Area Synthesis of Carbon Nanofibers and Silicon Nanowires by Chemical Vapor Deposition Technique [Oral presentation]
Choi, W K, National Univ of Singapore; Yun, J, Liew, T H, Singapore-MIT Alliance/National Univ of Singapore; Dawood, M K, National Univ of Singapore, Singapore

Nanoparticle Deposition via Electrophoresis
Dickerson, J H, Vanderbilt Univ, USA

Processing and Properties of Amorphous Metallic Alloys, Precursors for New Functional and Structural Materials
Silicon and Titanium Oxide Nanoparticles by Laser Pyrolysis: Elaboration of Nanostructured Materials for Optical and Energy Applications

From Powder to Product
Steingrüber, K, Burgard, D, Gossmann, K, Herold, M, Bühler PARTEC, Germany

The MoS2 Nanohybrids Grown in a Confined Geometry of Nanotube Reactors
Remskar, M, Jožef Stefan Inst, Slovenia

Microstructure, Phase Stability and Oxidation Behavior of Nanostructured NiCrAlY Coatings Developed by Cryomilling: Experimentation and Mechanistic Investigation
Ma, K K, Schoenung, J M, Univ of California-Davis, USA

37. VORTEX-INDUCED VIBRATIONS IV (V. 3)
Tuesday June 22 08:00
Chair: Lim, FK, 2H Offshore Engineering, UK
Co-Chair: Mostafa Gharabaghi, AR, Sahand Univ of Technology, Iran

A Method of Deep-water Riser Vortex-induced Vibration Fatigue Life Prediction Based on Fatigue Crack Growth Theory
Yang, L, Li, H J, Ocean Univ of China, China

Conductor System Fatigue Excitation and Mitigation
Ching, L S, Natarajan, S, 2H Offshore Engineering, Malaysia; Howells, H, 2H Offshore Engineering, UK

Experimental Studies on the Mechanism of Vortex-induced Vibration Suppression using Helical Strakes
Zhou, T M, Univ of Western Australia, Australia

Numerical Study on the Suppression of the Vortex-induced Vibration of Helical Strakes
Yuang, J K, Huang, W P, Ocean Univ of China, China

VIV Suppression Device Effectiveness Tests for Steel Catenary Risers (SCR) — Review and Recommendations
Zhang, H, 2H Offshore, Malaysia; Lim, F, 2H Offshore Engineering, UK; Lu, G R, 2H Offshore, Malaysia

38. FRONTIER ENERGY RESOURCES IV: Gas Hydrates 2 (V. 1)
Tuesday June 21 08:00
Chair: Patil, S, Univ of Alaska-Fairbanks, USA
Co-Chair: Chen, G J, China Univ of Petroleum, China

Geological and Geochemical Characteristics of Gas Hydrate in the Qilian Permafrost, Qinghai Province, China
Lu, Z Q, Inst of Mineral Resources, CAS; Zhang, Y Q, Inst of Exploration Techniques, CAS; Zhu, Y H, Inst of Mineral Resources, CAS; Wen, H J, Li,
Recovery Methane from Natural Gas Hydrates using the Mixture of Carbon Dioxide and Nitrogen  
Lee, H, Cha, M J, Shin, K C, Park, Y J, KAIST; Lee, J H, KIGAM, Korea

Simulation of Hydrate Formation and Inhibition of Submarine Wet-gas Pipeline  
Huang, M, Jing, J Q, Southwest Petroleum Univ; Zhang, Y, CNOOC; Pu, M, PetroChina Planning & Engineering Inst; Qin, X G, Southwest Petroleum Univ, China

Microscale Numerical Modelling for Permeability Reduction of Solid-Water Phases in Sand Sediment  
Sato, T, Mitsuhori, K, Hirabayashi, S, Brumby, P, Norimatsu, Y, Univ of Tokyo; Nagao, J, Ebinuma, T, National Inst of AIST, Japan

Inhibition Effect of NaCl-Bentonite Aqueous Solution for Methane Hydrate Formation  
Kawamura, T, Tetsu, T, Yamamoto, Y, Kiyono, F, Ogasawara, K, Komai, T, National Inst of AIST, Japan

Study on the Relative Permeability with Change of Methane Hydrate Saturation in Glass Beads Packs  
Liu, Y, Song, Y C, Lam, W H, Dalian Univ of Tech; Cu, X C, CNOOC, China

Effect of Confining Pressure on Mechanical Properties of Artificial Methane Hydrate Bearing Sediments  
Miyazaki, K, AIST; Yamaguchi, T, Toho Univ; Sakamoto, Y, Tenma, N, Ogata, Y, Aoki, K, AIST, Japan

The Synergism of PEG to Kinetic Hydrate Inhibitor  
Sun, Z Y, Chen, L T, Peng, B Z, Chen, G J, China Univ of Petroleum, China

MRI Measurements of CO2 Hydrate Formation and Dissociation in Porous Medium  
Yang, M J, Song, Y C, Zhao, Y C, Dalian Univ of Tech, China

39. REES IV: Wind 4 (V. 1)  
Tuesday June 22 08:00 303AB, 3F

Chair: Vorpahl, F R, Fraunhofer Inst for Wind Energy and Energy System Technology, Germany

Self-learning Wind Farms: Artificial Intelligence for Offshore Wind Turbines Modelling  
Sapronova, A, Johannsen, K, Univ of Bergen, Norway

LQG/LTR Control Design for Wind Turbine Systems  
Karimi, H R, Mady, K, Hovland, G, Univ of Agder, Norway

Wind Turbine Torque Numerical Simulation in Different Fluid Flow Condition  
Sasongko, N A, Kalvig, S M, Univ of Stavanger; Mahmoudi, J, Univ of Stavanger/International Research Inst of Stavanger, Norway

Experimental Study of Wave Impact on Offshore Wind Turbine Foundation
Collision Risk Analyses for Offshore Wind Energy Installations
Povel, D, Bertram, V, Germanischer Lloyd, Germany; Steck, M, GL GVC Energy Service Bangalore, India

Mesh Stiffness Characteristics Analysis of Planetary Gear Train for Wind Turbine Gearboxes
Kim, J K, Lee, G H, Park, Y J, KIMM; Chong, T H, Hanyang Univ; Rim, C W, KIMM, Korea

An Optimal Design for MW-class Wind Turbine Gearboxes Based on Structural Characteristics
Lee, G H, Park, Y J, Yin, J K, Nam, Y Y, KIMM, Korea

40. ARCTIC SCIENCE & TECH IV: Polar Ocean Environ (V. 2)
Tuesday June 22 08:00 305, 3F
Chair: Bekker, AT, Far Eastern State Tech. Univ, Russia
Co-Chair: Shi, J, Ocean Univ of China, China

The Response of Ice Thickness to the Climate Change in Bohai Sea
Yuan, S, Chen, W B, National Marine Environmental Monitoring Center; Gu, W, Xia, Y J, Beijing Normal Univ, China

The Influence of Pacific Inflow to the Arctic Ocean
Li, X, Su, J, Shi, J X, Cao. Y, Ocean Univ of China, China

Observing Polar Ocean with XCTD Launched from Helicopter
Shi, J X, Hou, J Q, Jiao, Y T, Ocean Univ of China, China

Study on Subsurface Warm Water in the Canada Basin Associated with Sea Ice Variation in 2003-2008
Cao, Y, Su, J, Zhao, J P, Ocean Univ of China; Li, S J, First Inst of Oceanography, China

Analysis on the Steric Sea Level in GIN Seas
Li, L, Wang, H J, Sun, R L, Liu, L, Ocean Univ of China, China

The Intraseasonal Variability of Wintertime Surface Air Temperature in Antarctica
Yu, L J, Zhou, M Y, Polar Research Inst of China, China

Field Tests of Superhydrophilic Pliable Sheet for Protection against Sea Spray Icing
Ozeki, T, Hokkaido Univ of Education; Adachi, S, Univ of Tsukuba; Izumiyama, K, National Maritime Research Inst, Japan

41. LNG SLOSHING V: Physics 2 (V. 3)
Tuesday June 22 10:30 310, 3F
Chair: Malenica, S, Bureau Veritas, France
Co-Chair: Wang, MY, COOEC, China

Lessons Learnt in Setting up a University Sloshing Laboratory
Pistani, F, Univ of Western Australia, Australia; Seah, R M, Chevron Energy Technology; Roddier, D, Marine Innovation and Technology, USA; Thiagarajan, K, Univ of Western Australia, Australia
Sloshing Response of LNG Tanks Subjected to Seismic Ground Motion
Su, J; Zhou, M Z; COOEC; Yu, J X, Jianjin Univ; Wei, H D, COOEC, China

Experimental Study of LNG Sloshing Dynamics using a Semi Physical Simulation System
Yue, Q J; Wei, Z J; Ruin, S L; Tong, S Q; Hu, T W, Dalian Univ of Tech, China

LNG Tank Sloshing Parameter Study in a Multi-tank Configuration
Baeten, A, Augsburg Univ of Applied Sciences, Germany

Seismic Response of LNG Storage Tank under Different Base Conditions and Liquid Height
Lee, K W, Kim, J H, Seo, H S, Korea Gas, Korea

Sloshing Load due to Liquid Motion in a Tank
Cao, Y S, MARINTEK, USA; Graczyk, M, Pakozdi, C, MARINTEK, Norway

42. HYDRODYNAMICS V: Freak/Tsunami Waves (V. 3)
Tuesday June 22 10:30 311A, 3F
Chair: Soukissian, T, Hellenic Centre for Marine Research, Greece

Numerical Exploration for Rogue Wave Generation in Laboratory Flume Based on Sideband Instability of Nonlinear Wave Trains
Hu, J P, South China Univ of Tech; Zhang, Y Q, Guangzhou Inst of Energy Conversion, CAS; Zhu, L S, South China Univ of Tech, China

Applications of Green-Naghdi Theory to Submarine Landslides and Slumps
Zhao, B B, Duan, W Y, Harbin Engineering Univ, China

Influence of Wave Breaking on Freak Wave formation in Random Wave Train
Zhao, X Z, Hu, C H, Kyushu Univ, Japan

Recent Characteristics of Stormy Waves in Japanese Coast
Hiraishi, T, Hirayama, K, Haruo, K, Port and Airport Research Inst, Japan

Numerical Investigation of Fully Nonlinear Interaction between Freak Waves and Submerged Structures
Yan, S Q, Ma, Q W, City Univ, UK

Rogue Wave Probability Prediction from Numerical Wave Model
Yu, X J, Zhang, Y G, Dalian Naval Academy, China

Numerical Simulation of Fully Nonlinear Focused Wave
Zhang, Y G, Yu, X J, Dalian Naval Academy, China

43. GEOTECH I: Mechanics of Soils 1 (V. 1)
Tuesday June 22 10:30 311B, 3F
Chair: Chen, J-W, National Cheng Kung Univ, Taiwan, China

FE Modelling of Spudcan Deep Penetration in Thin Crust over Soft Clay Incorporating Strain Rate and Strain Softening Effects
Hossain, M S, Randolph, M F, Univ of Western Australia, Australia

The Deforming Field Analysis of Shearing Process of Sands Basing on DPDM Technology
Liu, W B, Li, Y X, Wang, D S, Zhang, H, Shanghai Maritime Univ, China

Back Analysis of the Viscoelastic Parameters of Layered Soft Ground and Long-term Settlement Prediction
Shi, D D, Shanghai Maritime Univ; Zhou, J, Tongji Univ; Liu, W B, Shanghai Maritime Univ, China; Xue, J F, Monash Univ, Australia

Rheological Properties of Some Marine Muds Dredged from China Coasts
Ng, C O, Zhang, W Y, Univ of Hong Kong; Bai, Y C, Tianjin Univ, China

Statistical Consideration on Spatial Interpolation of Soil Properties through Artificial Neural Network
Oda, K, Tokida, K, Shunsuke, K, Osaka Univ, Japan

Mechanical Properties of Blended Core Materials for Earth-fill Dams
Suzuki, M, Uchida, K, Kawabata, T, Iwade, I, Kobe Univ, Japan

The Effect of Particle Size Distribution on the Deformation Behavior of Granular Soils based on a Digital Image Analysis for the Plane Strain Test
Jang, E R, Chung, C K, Choi, S H, Seoul National Univ, Korea

Crack Formation due to Gas Expansion and Fracture Toughness of a Marine Clay
Yang, S L, Kvalstad, T, Norwegian Geotechnical Inst, Norway

Prediction of Water Retention Curve of Soils from Grain-size Distribution Curve
Turker, E, Aytekin, M, Karadaeniz Tech Univ, Turkey

The Plastic Yield Loci of a Shallow VLA in Clay
Jiao, Y S, Fan, M H, Zhang, Q F, Hebei Univ of Tech; Liu, H X, Tianjin Univ, China

44. Subsea II: Flow Assurance (V. 1)
Tuesday June 22 10:30 306AB, 3F
Chair: Paulsen, G, Reinertsen, Norway

Ormen Lange Pipelines - Assessments of Pipeline Behaviour after Production Start-Up
Bostrom, T, Waldang, H, Halvorsen, V H, Reinertsen AS; Hoden, O M, Statoil, Norway

Study on the Existence of Asphaltene Deposition in Deepwater Crude Oil Pipeline
Chen, J W, Jing, J Q, Zhu, H J, Southwest Petroleum Univ; Yu, X C, CNOOC; Huang, X F, CNOOC Energy Development, China

The Experimental Study of the Natural Gas Hydrate's Dynamic Control Method in Subsea Multiphase Flow Pipeline
Li, Q P, Yao, H Y, Wang, T, CNOOC; Yang, X J, Daqing Oilfield Construction Design & Research Inst, China
Investigation on the Phase Separation of Liquid-liquid Two-phase at the Vertical Multi-T Junctions
Xu, J Y, Wu, Y X, Inst of Mechanics, CAS, China

The Studies of the Correlation between Oil-gas-water Multiphase Flow Pattern and Subsea Pipeline Erosion
Li, Q P, CNOOC; Zhang, K, Song, C Y, Daqing Oilfield Construction Design & Research Inst, China

Simulations of the Influence of Solid-phase Deposition on Flow Properties in Submarine Pipelines by CFD
Zhu, H J, Jing, J Q, Southwest Petroleum Univ; Li, Q P, Yu, X C, CNOOC, China

Experimental Study on Gas-Water-Oil Flow in Offshore Pipelines
Gong, J, Liu, D S, Wu, H H, Guan, Z W, China Univ of Petroleum, China

Numerical Simulations on Apparent Wall Slip of Liquid-solid Two-phase Flow in Pipes
Xie, C L, Ni, L Y, China Univ of Petroleum, China

Experimental Study and Modeling on Wax Deposition in Offshore Pipelines
Gong, J, Zhang, Y, Wang, P Y, Wang, K, Fang, Y, China Univ of Petroleum, China

The Preliminary Study of Hydrate Anti-agglomerant Applied in Multiphase Flow Pipeline
Yao, H Y, Li, Q P, CNOOC;

45. HPM II: Adv Materials & Structures 2 (V. 4)
Tuesday June 22 10:30 307AB, 3F

Chair: Price, JC, Gate LLC Engineering Consultants, USA

Residual Life Assessment of Elbow with Volumetric Surface Defect under Cyclic Inner Pressure
Yukhymets, P, Paton Welding Inst, Ukraine

Experimental and Analytical Study of the Structural Behavior of Sandwich Pipes under the Effect of Longitudinal Bending
De Souza, A C, Netto, T A, COPPE/UFRJ, Brazil

Safety Analysis on Welded Joint of Submarine Oil and Gas Pipeline
Li, C R, CNPC, China

Analysis of Three-dimensional Crack in Welded Joint Structure using Shell-solid Zooming Method
Tanaka, S, Hiroshima Univ; Okada, H, Tokyo Univ of Science; Ogawa, S, Okazawa, S, Hiroshima Univ;., Japan

Experimental Study on Mechanical Property of Offshore Platform Concrete Filled Steel K-Joints
Chen, Y, Huaqiao Univ; Guo, X M, Yin, Y M, Zhongyuan Oil Field, China

Comparison of Shell and Solid elements for Hot Spot Stress Analysis of Complex Welded Joints
Liu, G, Huang, Y, Li, Z S, Dalian Univ of Tech, China
A Low-cost and High-performance Rust Converter Suitable for Ocean Vessel Hull Treatment
Fan, X Q, Zhao, X D, Li, Z H, Zhejiang Ocean Univ, China

Optimization Design of Offshore Platform Pipe-making Workshop
Hu, Y H, Li, C R, Zheng, L, Wang, Z J, CNPC, China

Design and Test of Submersible Umbrella & Underwater Maintenance Complex Node Cover
Chen, Y H, Chen, G M, China Univ of Petroleum, China

46. COASTAL I. Coastal Waves 1 (V. 3)
Tuesday June 22 10:30 308, 3F

Chair: Deguchi, I, Osaka Univ, Japan
Co-Chair: Liang, QH, Newcastle Univ, UK

Image Measurements of Three-dimensional Shapes of Solid Objects and Liquid Free-surfaces
Watanabe, Y, Mitobe, Y, Niida, Y, Hokkaido Univ, Japan

LES-Stochastic Coupling Model of Bubble-laden Turbulence
Watanabe, Y, Niida, Y, Mitobe, Y, Hokkaido Univ, Japan

Dissipation of Wave Energy under Monotonic Wave Mud Interaction
Hsu, W Y, Hwung, H H, Yang, R Y, Hsu, H C, Chang, L H, National Cheng Kung Univ, Taiwan, China

Mathematical Model of Wave Transformation over the Radial Sand Ridge Filed on Continental Shelf of South Yellow Sea
Yang, Y Z, Hohai Univ, China

Wave Prediction for Seawall Rehabilitation in Nanri Island
Zheng, J H, Yang, X, Zhang, C, Hohai Univ, China

Analysis of Local Effects around a Submerged Reef Using Time-Frequency Analysis Methods
Bruehl, M, Oumeraci, H, Tech Univ Braunschweig, Germany

Numerical Modeling and Experimental Visualization of Wave Propagation over Semicircular Obstacles
Kasem, T H, Sasaki, J, Yokohama National Univ, Japan

Forecasting System of Marine Recreational Safety and Suitability Indexes
Yen, C C, Chang, H W, Lin, S F, Industrial Technology Research Inst; Yang, T W, Central Weather Bureau; Chien, L K, National Taiwan Ocean Univ, Taiwan, China

47. PIPELINES & RISERS I: SCR (V. 2)
Tuesday June 22 10:30 301AB, 3F

Chair: Fontaine, E, AMOG Consulting, Australia

PURE (Premium Upset Riser Ends) - Expanding the Possibilities of SCR Application
Rohden, V, Chatterjee, A, Vallourec & Mannesmann Tubes, Germany; Kumar, V, TWI Ltd, UK
An Effective Method to Predict the DDMS Platform Motion Connected the Steel Catenary Riser (SCR)
Li, B B, Harbin Inst of Tech; Ou, J P, Harbin Inst of Tech/Dalian Univ of Tech, China

Stability and Frequency Response of Top-tensioned Risers and SCRs
Todd, W W, Riser Analysis & Management, USA

SCR Design Consideration for Polyester Mooring System
Chen, Y J, Cao, P M, Slider, M, Ma, J, SBM Atlantia, USA

A Novel Design of Retrofit Hang-Off Receptacle Clamp for Tie-Back of Steel Catenary Risers to BP Pompano
Chen, J M, Sriraman, S, MCS; Conner, M, BP, USA

48. FRONTIER ENERGY RESOURCES V: Ocean Resources 1 (V. 1)
Tuesday June 21 10:30 302AB, 3F
Chair: Liu, SJ, Central South Univ, China

Current Issues in Seafloor Massive Sulfide Development
Fukushima, T, Univ of Tokyo; Okamatsu, A, Hosei Univ, Japan

Hunting for Seafloor Massive Sulphide Deposits Using Gliders Fleet's Cooperative Sampling
Jin, J C, Zhang, J, Wang, Y F, Guan, S, State Oceanic Administration, China

Novel Autonomous Float for Deep-Sea Hydrothermal Plume Observation
Yang, Y, Wang, Y H, Sun, X J, Tianjin Univ, China

Research on the Effect of Grounding Pressure Distribution on Traction Force of Tracked Vehicle
Wu, H Y, He, J S, Chen, X M, Gao, Y Q, Changsha Inst of Mining Research; Liu, S J, Central South Univ, China

Algae Aquaculture Surveys on Deep Sea Water Application
Chen, A P, Yang, S Y, Fang, M D, Lo, S C, Industrial Technology Research Inst; Lee, T M, National Sun Yat-sen Univ; Yen, C W, Industrial Technology Research Inst, Taiwan, China

49. REES V: Tidal & OTEC (V. 1)
Tuesday June 22 10:30 303AB, 3F
Chair: Jo, CH, Inha Univ, Korea

Comparison of Tidal Current by an Ocean Model with the Long Term Observations at Tatsuno Seto in Nagasaki, Japan
Chen, X Z, Yamachika, K, Kyozuka, Y, Kyushu Univ, Japan

Optimization of Blade Deflection Angle of Vertical-Axis Turbine for Tidal Current Energy Conversion
Luo, Q J, Zhang, L, Han, R G, Harbin Engineering Univ, China

A High Performance Darrieus-Savonius Turbine with a Velocity Accelerator for Tidal Current Power Generation
Ueno, M, Takahashi, K, Kyozuka, Y, Kyushu Univ, Japan

Flow Pattern around Duct Implemented in Tidal Current Power
Jo, C H, Lee, K H, Rho, Y H, Yim, J Y, Inha Univ, Korea

**CFD Investigation of the Wake Field of a Rotating Darrieus Tidal Turbine**
Dai, Y M, Univ of Plymouth, UK; Lam, W H, Dalian Univ of Tech, China

**Investigation on Stability of OTEC system Using Ammonia/Water Mixture as Working Fluid by Continuous Operation for Two Weeks**

**CFD Modelling Strategy of a Straight-Bladed Vertical Axis Marine Current Turbine**
Dai, Y M, Gardiner, N, Univ of Plymouth, UK; Lam, W H, Dalian Univ of Tech, China

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**50. ARCTIC SCIENCE & TECH V: Ice Forecasting (V. 2)**
Tuesday June 22 10:30 305, 3F

Chair: Su, J, Ocean Univ of China, China
Co-Chair: Liu, Y, Natl Marine Environ Forecasting Center, China

**Sea-Ice in the NCEP Climate Forecast System Reanalysis**
Wu, X R, Grumbine, R, NOAA/NCEP, USA

**Seasonal Simulations of a Coupled Ice-ocean Model in the Bohai Sea**
Liu, Y, Liu, Q Z, Bai, S, Tang, M N, National Marine Environmental Forecasting Center, China

**An Ice-ocean Forecasting System for Eastern Canadian Waters**
Tang, C, Dunlap, E, Detracey, B, Bedford Inst of Oceanography, Canada

**Modeling the Seasonal Variations of Sea Ice Cover in the Prydz Bay, Antarctic**
Li, Q, Polar Research Inst of China; Wu, H D, National Marine Environment Forecast Center; Lu, Zhang, L, SOA, China

**Simulation Study on the Impact of the Arctic Sea Ice Variation on China Winter Circulation**
Wei, L X, Huang, H Q, Zhang, T, National Marine Environment Forecasting Center, China

**A New Generation of Satellite Radar Imaging Opportunities for Operational Ice Monitoring**
Partington, K C, Polar Imaging Limited, UK

**High-resolution Modelling of Ocean and Sea-ice Conditions in the Canadian Arctic Coastal Waters**
Lu, Y Y, Nudds, S, Dunphy, M, Hannah, C, Prinsenberg, S, Bedford Inst of Oceanography, Canada

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**Plenary 4 (V.4)**
Tuesday June 22 13:00 307AB, 3F

**Addressing Materials Challenges of Recent Asia and Pacific Rim Upstream Developments**
Wright, E J, ExxonMobil Development, USA

Introduction by Ray, M, ExxonMobil Research & Engineering, USA
**51. LNG SLOSHING VI: CFD (V. 3)**

**Tuesday June 22 14:00**

310, 3F

**Chair:** Bridges, T, Univ of Surrey, UK

**Numerical Simulation in Time Domain and Experimental Validation of LNG Tank Sloshing Problems**
Huang, S, Duan, W Y, Zhu, X, Harbin Engineering Univ, China

**Numerical Simulation of Liquid Sloshing in LNG Containers**
Li, Y X, Sun, F F, Zang, L L, Wang, W C, China Univ of Petroleum, China

**Numerical Simulation of LNG Sloshing Dynamics for FLNG**
Yue, Q J, Ruan, S L, Zuo, X C, Wei, Z J, Dalian Univ of Tech, China

**Numerical Simulation of 2D Sloshing with HSPH Method**
Zheng, X, Duan, W Y, Harbin Engineering Univ, China; Ma, Q W, City Univ, UK

**Mesh-adaptive Level Set Calculation of Sloshing in Vessels**
Dervieux, A B, INRIA; Allain, O, Guégan, D, LEMMA; Diebold, L, Bureau Veritas; Alauzet, F, INRIA, France

**Numerical Simulation of 2D Sloshing by Using ALE2D Technique of LS-DYNA and CCUP Methods**
Lee, S G, Korea Maritime Univ; Yang, K K, Seoul National Univ; Baek, Y H, Lee, I H, Korea Maritime Univ; Kim, Y H, Seoul National Univ, Korea

**Comparison of CFD Calculations and Experiment for the Dambreak Experiment with One Flexible Wall**
Wemmenhove, R, Gladso, Iwanowski, B, Lefranc, M, FORCE Technology Norway, Norway

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**52. HYDRODYNAMICS VI: Wave Loading 1 (V. 3)**

**Tuesday June 22 14:00**

311A, 3F

**Chair:** Rhee, KP, Seoul National Univ, Korea

**Time-Domain Simulation of Nonlinear Wave Impact Loads on Fixed Offshore Platform and Decks**
Chen, H C, Texas A&M Univ, USA

**Prediction of Wave Uplift Loads on Horizontal Plate**
Meng, Y Q, Chen, G P, Hohai Univ, China

**Study on Added Resistance of a Shallow-Draft Ship with Unsteady Wave-Pattern Analysis**
Kashiwagi, M, Sasakawa, T, Wakabayashi, T, Osaka Univ, Japan

**A Methodology for Calculating the Hydrodynamic Forces for Structural Analysis Using the High-order Method**
Menezes, F, Silva, R, Petrobras, Brazil

**Analysis of Second-order Wave Force on Floating Bodies using FEM in Time-domain**
Hong, S Y, Nam, B W, MOERI/KORDI, Korea
Analysis of Linear and Nonlinear Structural Loads on a 6500 TEU Containership by a Time-Domain Rankine Panel Method
Kim, Y H, Song, M J, Kim, K H, Seoul National Univ, Korea

Validation of Nonlinear Wave Load Prediction using Segmented Model Test for Large Container Carrier
Kim, S E, American Bureau of Shipping, USA; Hong, S Y, MOERI/KORDI, Korea

53. GEOTECH II: Soil Properties & Test (V. 1) Tuesday June 22 14:00 311B, 3F
Chair: Yang, S L, Norwegian Geotechnical Inst, Norway
Co-Chair: Ng, C-O, Univ of Hong Kong, China

Experimental Study of Shanghai Silty Clay's Deformation Fields based on the Principle of Confined Compression Test
Cao, L, Nanjing Univ; Liu, W B, Shanghai Maritime Univ, China

Test Study on the Properties of Shanghai Soft Soil due to Long-term Unloading
Jiang, J, Tongji Univ; Qi, B, Wuxi Traffic Bureau; Liu, G B, Tongji Univ, China

The True Triaxial Experiments of Coarse-grained Soils and the Elastic-plastic Constitutive Model
Zhang, Y G, Zhu, J G, Zhang, K Y, Hohai Univ, China

True Tri-axial Testing Study on Soil's Stress Induced Anisotropy
Zhang, K Y, Zhu, J G, Yin, Z Z, Hohai Univ, China

Experimental Study of Time-dependent Behavior of Clays Subjected to Loading and Unloading with Constant Rate of Strain
Lee, M S, Oda, K, Tokida, K, Osaka Univ, Japan

Application of X-ray Computed Tomography in Marine Clays
Yang, S, Schjetne, K, Kvalstad, T, Norwegian Geotechnical Inst, Norway

A Laboratory Study to Determine the Shear Strength of Soft Clays using a Flow Penetrometer
Tufenkjian, M R, California State Univ-Los Angeles; Thompson, D J, Naval Facilities Engineering Service Center, USA

Influence of Soil Strength Anisotropy and Inhomogeneity on Failure Envelope of Embedded Foundations under Combined Loading
Fan, Q L, Ludong Univ, China

A Study on Evaluation of the Period of Stepped Suction Pressure in Suction Drain
Ahn, D W, Kim, S H, Hanyang Univ; Han, S J, Expert Group for Earth & Environment; Kim, S S, Hanyang Univ, Korea

54. Subsea III: Measurement Technology (V. 1) Tuesday June 22 14:00 306AB, 3F
Chair: Wang, ML, COOEC, China

Sensor Fault Diagnosis for Autonomous Underwater Vehicle
Chen, X L, Xu, Y R, Wan, L, Li, Y, Harbin Engineering Univ, China
Investigations for Real Time Raman Measurements in the Deep-ocean by Applying Long Optical Fibers  
Kronfeldt, H-D, The Univ Berlin; Wohlfarth, K, Marum; Ahmad, H, Maiwald, M, Schmidt, H, Tech Univ Berlin; Sumpf, B, Klehr, A, Erbert, G, Ferdinand-Braun Inst fur Hochfrequenztechnik, Germany

Development of the Glider-type Turbulence Ocean Microstructures Acquisition Profiler, TurboMAP-G  
Arima, M, Osaka Prefecture Univ; Yamazaki, H, Tokyo Univ of Marine Science and Tech, Japan

Sediment Waves and Other Forms as Evidence of Geohazards (Caspian Sea)  
Putans, V A, Merklin, L R, Levchenko, O V, P P Shirshov Oceanology Inst, Russia

Study on the Temperature and Velocity Dependency for Marine Fenders  
Shimizu, K, Bridgestone Corp; Ueda, S, Tottori Univ; Yamase, S, Bridgestone Corp, Japan

Electronic System Design of Smart Ocean Bottom Magnetometer  
Guan, C Y, Zhang X T, Liu, J B, Hangzhou Dianzi Univ, China

55. HPM III: Adv Materials & Structures 3 (V. 4)
Tuesday June 22 14:00 307AB, 3F
Chair: Surkein, M B, ExxonMobil Development, USA

Quality Control and Service Life Prediction of Concrete Structures in Severe Marine Environment  
Cao, W Q, Fan, H, Zhao, T J, Qingdao Technological Univ, China

Reliability Models and Service Life Estimation of Concrete Structure under Freeze-thaw Action  
Wang, H L, Song, Y P, Dalian Univ of Tech, China

Features of Reinforced Concrete Structures Monitoring Based upon the Use of Single Fiber Multimode Interferometers  
Makarova, N V, Vitrik, O B, Lantsov, A D, Zhizhchenko, A M, Inst of Automation and Control Processes, FEB RAS, Russia

Internal Deterioration in Concrete Lined Open Channels Due to Frost Damage  
Suto, M, Ogata, H, Hattori, K, Tottori Univ; Takata, R, Matsue College of Tech; Cleopatra, P, Tottori Univ, Japan

Study of Deep Water Cement Experimental Method  
Xi, F Z, Qu, J S, Lv, G M, Tan, W L, Wan, C, China National Petroleum Offshore Engineering, China

Fundamental Study on Verification RC Column Failed by Shear  
Sato, F, Watanabe, J, Tokai Univ; Kawamura, J, Total Information Service; Shibuya, K, Tokai Univ, Japan

Experimental Study on the Light Weight Concrete Applied to Offshore Platform Structural System  
Lee, H H, Huang, H J, National Sun Yat-sen Univ, Taiwan, China
A Nonlinear Numerical Model for the Fully Dispersive Waves and Its Application
Wu, Z, Hong, G, Zhang, Y, Hohai Univ, China

Maximum entropy PDF and "Apparent" Power Spectral Method for Non-linear Wave and Their Application
Xiong, C B, First Inst of Oceanography, SOA, China; Chen, Z S, Kim, W J, Mokpo National Univ, Korea

Application of Finite Difference-based Lattice-Boltzmann method
Zhang, J F, Zhang, Q H, Tianjin Univ, China

An Optimized Green-Naghdi Model for Nonlinear Dispersive Waves Simulations
Chazel, F, Univ de Toulouse; Lannes, D, Ecole Normale Superieure; Marche, F, Univ Montpellier, Tissier, M, Univ Bordeaux, France

An Analytical Solution of the Mild-slope Equation for Waves Scattering by a Circular Island on a Submerged Shoal
Cheng, Y M, Lee, J F, National Cheng Kung Univ, Taiwan, China

A New Adaptive Grid Based Shallow Water Equation Solver for Coastal Hydrodynamic Modelling
Liang, Q H, Newcastle Univ, UK

Characteristics of Tsunami Fluid Force Acting on Girder Bridge
Araki, S, Osaka Univ; Ishino, K, Ta isei Corp; Deguchi, I, Osaka Univ, Japan

Sand Overtopping from Sea Dike on Sandy Beach
Deguchi, I, Arita, M, Han, J M, Osaka Univ, Japan

Wet Collapse Strength of Flexible Pipe with Non-nominal Flexbody Profiles
Lu, J, Tan, Z, Ma, F, Sheldrake, T, Wellstream International, USA

Gapspan Creep Analysis for Barrier Layer in an Unbonded Flexible Pipe
Shen, Y, Tan, Z, Zhal, J, Sheldrake, T, Wellstream International, USA

Nonlinear Dynamic Analysis of the Floating Assembled-pipeline on the Sea Based on CFD
Wang, Y L., Zhang, S F, Logistical Engineering Univ of PLA, China

Design and Analysis of Taper Stress Joint for Top Tensioned Risers
Zhang, R X, Zhang, Q, Huang, Y, Dalian Univ of Tech, China

Non-linear Dynamic Extremal Response Analysis of Deepwater Riser under Wave and Current Combined Operations
Zhou, S, Nie, W, Harbin Engineering Univ, China

Investigation on the Dynamics of Floating Systems Effects in the Top Tension of Risers
Rateiro, F, Malta, E B, Fujarra, A L C, Univ of Sao Paulo, Brazil

Electromagnetic Methods Research on Monitoring of Marine Riser Technology Condition
Deng, R, Meng, F S, Ocean Univ of China, China

A Finite Element Method Approach on Liner Wrinkling of Snug Fit Lined Pipe
Hilberink, A, Heerema Marine Contractors/TU Delft; Gresnigt, A M, Sluys, L J, TU Delft, The Netherlands

Jiao, Z L, Shuai, J, Han, K J, Feng, Q D, Wang, J Q, China Univ of Petroleum, China

58. FRONTIER ENERGY RESOURCES VI: Ocean Resources 2 (V. 1)
Tuesday June 21 14:00 302AB, 3F

Chair: Fukushima, T, Univ of Tokyo; Japan

Technology Tool for Deep Ocean Exploration: Remotely Operated Vehicle
Manuecius Selvakumar, J, Atmanand, M A, et al, NIOT, India

Modeling and Simulation on a Heave Compensation System Combining Passive and Active Control for Deep Ocean Mining
Tang, X Y, Liu, S J, Central South Univ, China

Parameter Design of Dynamic Vibration Absorber for Active Heave Compensation System of Deep-sea Mining
Li, L J, Liu, S J, Central South Univ, China

59. REES VI: Waves 1 (V. 1)
Tuesday June 22 14:00 303AB, 3F

Chair: Hong, SW, Maritime & Ocean Engineering Research Inst, Korea
Co-Chair: LI, Y, National Renewable Energy Lab, USA

Depth Variation of Power Flux in Fluid Gravity Waves
Engstrom, J, Isberg, J, Leijon, M, Uppsala Univ, Sweden

Artificial Neural Network Application in Short-term Prediction of Airflow in an Oscillating Water Column
Sheng, W, Lewis, T, University College Cork, Ireland

Real-Time, Wide Area Wave Field Measurement
Sellar, B G, Bruce, T, Bryden I, Univ of Edinburgh, UK

Optimisation of a Floating Oscillating Water Column Wave Energy Converter
Stappenbelt, B, Cooper, P, Univ of Wollongong, Australia
Irregular Wave Force on OWC Caisson Breakwater and its Reliability Analysis
Shi, H D, Liu, Y J, Yang, G H, Ocean Univ of China, China

Numerical Simulation of Water and Air Flow in Oscillating Water Column Air Chamber
Yin, Z G, Ocean Univ of China, China

An Extension of the Green's Function Multipole Expansion, for the Simulation of Wave Energy Converters Farms
Borgarino, B, Babarit, A, Ferrant, P, Ecole Centrale de Nantes, France

60. ARCTIC SCIENCE & TECH VI: Polar Shipping (V. 2)
Tuesday June 22 14:00
Chair: Prinsenberg, SJ, Bedford Inst of Oceanography, Canada
Co-Chair: Willemsen, KA, Delft Univ of Technology, The Netherlands

Unsteady Motion of Submarine under an Ice Sheet
Pogorelova, A V, Kozin, V M, Inst of Machining and Metallurgy, FEB RAS, Russia

Technique of Ultimate Ice Strength and Strength Margins of Ship Structures
Zhitnikov, I, Kulesh, V, Kalenchuk, S, Mamontov, A, Sidorenko, I, Far Eastern State Tech Univ, Russia

Trends in Canadian Arctic Shipping Traffic - Myths and Rumours
Judson, B, BMT Fleet Technology, Canada

Resistance, Propulsion and Maneuvering Performance of USCG Icebreaker Mackinaw in Ice
Lau, M W H, Inst for Ocean Technology, Canada

Ice Resistance Prediction Formula for Korean's First Icebreaker Araon
Jeong, S Y, Lee, C J, Cho, S R, MOERI/KORDI, Korea

A Ship Maneuvering in Ice Modeling Software OSIS-IHI [ORAL PRESENTATION]
Lau, M W H, Inst for Ocean Technology, Canada

61. LNG SLOSHING VII (V. 3)
Tuesday June 22 16:20
Chair: Kashiwagi, M, Osaka Univ, Japan

Wet Drop Impact Response Analysis of Cargo Containment System in Membrane-type LNG Carrier Using FSI Technique of LS-DYNA
Lee, S G, Baek, Y H, Lee, I H, Korea Maritime Univ, Korea

Investigation of Wave Heights Effect on Sloshing Loads in LNG Tanks

Validation of Numerical Tools for LNG Sloshing Assessment
Zheng, X, Maguire, J R, Radosavljevic, D, Lloyd's Register EMEA, UK

Statistical Evaluation of Local Impact Pressures in Sloshing
Kim, Y H, Yoo, W J, Seoul National Univ, Korea

A Study on the Characteristics of Piezoelectric Sensor in Sloshing Experiment

Numerical Study of Violent Sloshing in a FPSO Tank
Zhang, Y M, American Bureau of Shipping, USA; Ma, Q W, Zhou, J T, City Univ, UK

Numerical Sloshing Assessment Including Tank Sloshing and Ship Motion Coupling Effect
Park, J J, Kawabe, H, Kim, M S, Kim, B W, Ha, M K< Samsung Heavy Industries, Korea

A Study on Coupling Effect between Sea-keeping and Sloshing for Membrane LNG Carrier
Wang, X, Arai, M, Yokohama National Univ, Japan

Experimental and Numerical Investigations of the Effect of Swash Bulkhead on Sloshing
Firoozkoohi, R, Faltinsen, O M, NTNU, Norway

A Numerical Study of Liquid Tank and Structure Interaction
Chen, B F, Huang, S M, Sun Yat-sen Univ, Taiwan, China

A Numerical Study with VOF Method for 2D Sloshing Flow in a Rectangular Container
Yang, W C, Hsu, C M, Taiwan Ocean Research Inst, Taiwan, China

The Numerical Study on the evolution of Forces of Various Sloshing Waves in a 3D Tank
Wu, C H, Chen, B F, National Sun Yat-sen Univ, Taiwan, China

62. HYDRODYNAMICS VII: Wave Loading 2 (V. 3)
Tuesday June 22 16:20 311A, 3F
Chair Ma, QW, The City Univ, UK

A Study on the Collision Avoidance System of a Ship Considering the Effects of Speed Dependent Coefficients

Experimental Study of Irregular Wave Slamming on the Semi-submersible Drill Platform under the Combined Action of Wind and Wave
Ma, Z, Zhai, G J, Dalian Univ of Tech, China

Theoretical Transfer Function of Force-controlled Wave Machines
Spinneken, J, Swan, C, Imperial College London, UK

Using the rasInterFoam CFD Model for Breaking Wave Interaction with a Cylinder
Morgan, G C J, Zang, J, Univ of Bath, UK

The on Board Wave Motion Estimator OWME: WaMoS II Provides Wave Profiles for Ship Motion Prediction from Nautical X-Band Radar Data
Dannenberg, J, Hessner, K, Reichert, K, OceanWaveS, Germany; Naaijen, P, TU Delft; van den Boom, H, MARIN, The Netherlands

Wave Diffraction and Radiation of a Submerged Hollow Sphere with an Opening Hole
Dong, M S, Miao, G P, Zhu, R C, Fan, J, Shanghai Jiao Tong Univ, China

Numerical Simulation and Analysis on Radiation Problems of Moving Vessels
Zhu, R C, Fang, Z Z, Miao, G P, Shanghai Jiao Tong Univ, China

Numerical Simulation and Analysis on Radiation Problems of Moving Vessels
Zhu, R C, Fang, Z Z, Miao, G P, Shanghai Jiao Tong Univ, China

63. GEOTECH III: Soil Dynamics (V. 1)

Tuesady  June 22  16:20
311B, 3F

Chair: Gaudin, C, Univ of Western Australia, Australia

Experimental Observations of Recycled Aggregates under Repeated Load
Oh, E, Yang, Y, Nepal, K, Chai, G, Griffith Univ, Australia

Effect of Cyclic Preshearing on Monotonic Shearing Behavior of Saturated Sand
Zhang, Z D, Huaihai Inst of Tech; Luan, M T, Jin, D, Dalian Univ of Tech, China

Clarification of Dynamic Behavior of a Spillway on Small Earth Dam Subjected to Simple Shear
Iwasaki, Y, Uchida, K, Kawabata, T, Kobe Univ, Japan

Allowable Bearing Pressure in Soils and Rocks through Dynamic Wave Velocities
Tezcan, S S, Bogazici Uni; Keceli, A, Istanbul Univ; Ozdemir, Z, Bogazici Univ, Turkey

Study on the Capacity Degradation of Bucket Foundation in Saturated Sand under Ice-induced Dynamic Loads
Chi, L, Inner Mongolia Univ of Tech, China

Simplified Calculation Model for Active Isolation Effect of Wave Impedance Block
Li, N, Gao, G Y, Tongji Univ, China

The Influence of Surface Ground on Vibration of the Structure
Agata, S, Katada, T, Suemasa, N, Tokyo City Univ; Arai, F, Geodesign Co, Japan

Feasibility Study on Countermeasure against Liquefaction using Micro-bubble
Kobayashi, M, Suemasa, N, Toshiyuki, K, Tokyo City Univ; Kouichi, N, Sato Kogyo Co; Okaniwa, K, Tokyo City Univ, Japan

Development of Similitude Law on Frequency of Input Motions in 1-G Shaking Table Tests
Kim, M M, Choi, J I, Yoo, M T, Yang, E K, Seoul National Univ; Kim, S R, Dong-A Univ, Korea
**64. Subsea III: Measurement Technology (V. 1)**

**Tuesday June 22 14:00**

**306AB, 3F**

**Chair:** Wang, ML, COOEC, China

Session 54 continues here.

**65. HPM IV: Shipbuilding Steels (V. 4)**

**Tuesday June 22 16:20**

**307AB, 3F**

**Chair:** Kang, KB, POSCO, Korea

**Development of Guidelines on Brittle Crack Arrest Design: Brittle Crack Arrest Design for Ultra Large Container Ships**

Yamaguchi, Y, Nippon Kaiji Kyokai; Yajima, H, Nagasaki Inst of Applied Science; Aihara, S, Tokyo Univ; Yoshinari, H, National Maritime Research Inst; Hirota, K, Mitsubishi Heavy Industries; Toyoda, M, IHI Marine United; Kiyosue, T, Kawasaki Shipbdg; Tanaka, S, Mitsui Engineering & Shipbdg; Okabe, T, Universal Shipbdg; Kageyama, K, Koyo Dockyard; Funatsu, Y, Nippon Steel; Handa, T, JFE Steel; Kawaihata, T, Sumitomo Metal Industries; Tani, T, Kobe Steel, Japan

**Development of Higher Toughness YP47(460N/mm²)-Class Steel Plate for Large Container Ships**

Funatsu, Y, Otani, J, Nippon Steel; Hirota, K, Mitsubishi Heavy Industries; Matsumoto, T, Nippon Kaiji Kyokai; Yajima, H, Nagasaki Inst of Applied Science, Japan

**Practical Application of Laser Arc Hybrid Welding to Shipbuilding**

Terada, S, Nakayama, S, Tsubota, S, Hirota, K, Mitsubishi Heavy Industries, Japan

**Residual Stress Analysis of Multi-layer Flux Core Arc Welding in the Joint of Ultra Thick Plates**

Lee, J H, Hwang, S Y, Yang, Y S, Kim, B J, Inha Univ, Korea

**Development of Brittle Crack Arrest Toughness Kca Test Method: Brittle Crack Arrest Design for Ultra Large Container Ships - 2**

Tomoya, K, Sumitomo Metal Industries; Matsumoto, K, Nippon Kaiji Kyokai; Yajima, H, Nagasaki Inst of Applied Science; Aihara, S, Tokyo Univ; Yoshinari, H, National Maritime Research Inst; Hirota, K, Mitsubishi Heavy Industries; Toyoda, M, IHI Marine United; Kiyosue, T, Kawasaki Shipbdg; Inoue, T, Nippon Steel; Handa, T, JFE Steel; Tani, T, Kobe Steel, Japan

**Effect of Structural Discontinuities of Welded Joints on Brittle Crack Propagation Behavior: Brittle Crack Arrest Design for Ultra Large Container Ships**

Handa, T, JFE Steel; Matsumoto, T, Nippon Kaiji Kyokai; Yajima, H, Nagasaki Inst of Applied Science; Aihara, S, Tokyo Univ; Yoshinari, H, National Maritime Research Inst; Hirota, K, Mitsubishi Heavy Industries; Toyoda, M, IHI Marine United; Kiyosue, T, Kawasaki Shipbdg; Inoue, T, Nippon Steel; Kawaihata, T, Sumitomo Metal Industries; Tani, T, Kobe Steel, Japan

**Increase of Fracture Toughness using Crack Arrest Design of Thick Steel Plate Welds in Large Container Ship**

An, G B, Ryu, K M, Park, J S, Lee, J S, POSCO; Park, T D, Hyundai Heavy Industries; Shi, Y T, Samsung Heavy Industries; Han, K H, Daewoo
Development of Thick YP460 MPa Class Steel Plates for Large Heat-input Welding for Very Large Containerships
Kaneko, M, Kobe Steel, Japan

66. COASTAL III: Waves and Breaking (V. 3)
Tuesday June 22 16:20 308, 3F
Chair: Araki, S, Osaka Univ, Japan

Bragg Interactions of a Cnoidal Wave with Rigid Bottom Ripples
Tang, C J, Lee, T C, National Cheng Kung Univ, Taiwan, China

A Study of Plunging Breaker Mechanics by SPH Method and PIV Measurements
Bai, Z G, Yang, L, Yang, W C, Tianjin Univ, China

Numerical Simulation of Breaking Wave with Level Set Method
Sun, Y W, Kang, H G, Dalian Univ of Tech, China

Predictive Equations for Estimation of Breaking WaveCharacteristics
Delavari, E, Mostafa Gharabaghi, A R, Chenaghlo, M R, Sahand Univ of Tech, Iran

Lagrangian Breaker Characteristics for Nonlinear Water Waves Propagating on Sloping Bottoms
Chen, Y Y, Hsu, H C, Li, M S, Lin, Y P, National Sun Yat-sen Univ, Taiwan, China

Measuring Wave Field of Taipei Harbour with a Marine Radar-reanalyzing the Images
Yim, J Z, Weng, W K, National Taiwan Ocean Univ, Taiwan, China

Wave Transformation over the Elliptic Shoal on a Slope
Hsu, C M, Taiwan Ocean Research Inst; Hsiao, S S, National Taiwan Ocean Univ; Lin, M C, Lee, Y J, National Taiwan Univ, Taiwan, China

Laboratory Study of Regular Wave Runup Height on Rough Slopes
Rasmeemasmuang, T, Burapha Univ, Thailand

Ensemble Modelling of Tide, Surge and Wave
Chen, Y P, Pan, S Q, Univ of Plymouth; Hewston, R, Cluckie, I, Swansea Univ; Wolf, J, Proudman Oceanographic Lab. UK

67. PIPELINES & RISERS III: Riser Design 2 (V. 2)
Tuesday June 22 16:20 301AB, 3F
Chair: Wu, M, J. Ray McDermott, USA

Lessons Learnt from Recent Deepwater Riser Projects
Saint-Marcoux, J-F, Acergy, UK; Abelanet, M, Acergy, Singapore; Bambino, S, Acergy, France

Effect of Hydrodynamic Coefficients on a Typical MWA Model in Orcaflex
Huang, G X, Nanyang Technological Univ, Singapore

Turbulent Flow around Two Yawed Wavy Cylinders in Tandem Arrangement
Lam, K, Lin, Y F, Hong Kong Polytechnic Univ; Zou, L, Wuhan Univ of Tech; Liu, Y, Hong Kong Polytechnic Univ, China

Calculation Formula for Natural Frequency of Radar Mast
Fukada, S, Tsuneishi Shipbldg, Japan; Yu, J X, Tianjin Univ; Zhao, L, Ocean Univ of China, China

Fatigue Damage of Risers with Two-Degrees-of-Freedom Vortex-Induced-Vibration
Tang, S Z, Huang, W P, Ocean Univ of China, China

Multi-Objective Optimization Based on TTR Interference Analysis
Huang, H, Zhang, Q, Huang, Y, Yan, Y, Dalian Univ of Tech, China

A New Analytical Model on Lateral Vibration and Impact of Drillstring
Liu, W, Zhou, Y C, Zhao, Q, CNPC, China

Effect of Several Key Parameters on the Dynamic Analysis of TTR
Yang, H B, Zhang, Q, Huang, Y, Li, W F, Dalian Univ of Tech, China

Drilling Riser Dynamic Characteristic of Marine Deep Water
Yang, J, Xie, R J, Liu, S J, Zhang, C Y, China Univ of Petroleum, China

A Finite Element Method for Calculating the Applied Top Tension and Static Configurations of Extensible Marine Riser
Athisakul, C, Phanyasahachart, T, Chucheepsakul, S, King Mongkut’s Univ of Tech Thonburi, Thailand

Casing Capacity Assessment under External Pressure and Formation Movement
Bjørset, A, Statoil Research Centre, Norway

68. RISK, SAFETY & RELIAB I: Safety Management (V. 4)
Tuesday June 22 16:20
Chair: Park, RS, Univ of Ulsan, Korea

Maritime Integration using ISO 15926 Standard
Kuang, L, Mu, L P, Prinz, A, Univ of Agder, Norway

The Safety Assurance Technology for the Long Term Operation of the Offshore Platform Facility
Cui, H X, Lan, X Y, Yang, Z H, China National Petroleum Offshore Engineering, China

Risk Analysis for Occupational Safety Management at Shipyard
Shinoda, T, Tanaka, T, Kano, Y, Kyushu Univ, Japan

Estimation of Consequences of Petrol-gas Construction Failures
Prokhorov, V A, Levin, A I, Yakutian State Univ, Russia

The Statistical Method Research of Vessels Traffic Flow Based on AIS
Wu, J H, Li, H X, Li, H, Wuhan Univ of Tech, China
Analyzing Environmental Contributors to Vessel Traffic Accident Based on Bayesian Theorem
Yin, F Y, Mou, J M, Wen, Y Q, Wuhan Univ of Tech; Li, W H, Zhang, H Z, Shenzhen Maritime Safety Administration, China

Integration of Decision-support Systems in STS Operations
Husjord, D, Pedersen, E, NTNU, Norway

Evacuation Risk Analysis against Tsunami Hazard Based on Spatial and Network Analyses on GIS
Murakami, K, Sutikno, S, Univ of Miyazaki, Japan

A Research on Ships Evacuation Simulation Due to a Tsunami Attack in the Seto Inland Sea
Murayama, M, Toyama National College of Tech; Kobayashi, E, Kobe Univ; Kondo, H, Setonaikai Maritime Safety Association, Japan

Industrial Safety Perception
Hussin, M B, Wang, B, Univ of Aberdeen, UK

Small Buoys for Wave Energy Harvesting: Experimental and Numerical Modeling Studies
Grilli, S T, Univ of Rhode Island; Bastien, S P, Electro Standards Labs; Grilli, A R, Asher, T, Univ of Rhode Island; Sepe, R B, Electro Standards Labs; Spaulding, M L, Univ of Rhode Island, USA

Development of High Efficient Wave Energy Converter utilizing Gyroscopic Moment for Producing Electricity
Kanki, H, Kobe Univ; Arii, S, Tottori Univ; Furusawa, T, Gyrodynamics Co; Otoyo, T, Kobayashi, Y, Kobe Univ, Japan

Resonance Characteristics of Float-Counterweight Type Wave Energy Conversion System
Taneura, K, Hadano, K, Koirala, P, Yamaguchi Univ; Nakano, K, Univ of Tokyo; Yoneyama, H, Ministry of Land & Infrastructure; Ikegami, K, Nagasaki Inst of Applied Science, Japan

An Experimental Study on Variable Liquid Column Oscillator for Highly Efficient Wave Energy Converters
Cho, B H, Yang, D S, Korea Electric Power Research Inst, Korea

An Ocean Wave-powered Di-electric Electro Active Polymer (DEAP) Generator
Wang, K S, Lin, G J, NTNU, Norway; Chen, M, Tongji Univ, China

Geometry Optimization of the IPS Wave Power Buoy

The Engineering Design of Oyster 2
Henry, A J, Naylor, D, Kaye, D, Doherty, R, Aquamarine Power, UK

An Investigation of the Hydrodynamic Characteristics of an Oscillating Water Column Device using a Level Set Immersed Boundary Model
Zhang, Y L, Zou, Q P, Greaves, D, Reeve, D, Hunt-Raby, A, Graham, D, James, P, Univ of Plymouth, UK

70. LNG SLOSHING VIII: Panel
Wednesday  June 23  08:00
310, 3F
Chair: Kim, YH, Seoul National Univ, Korea
Co-Chair: Maguire, JR, Lloyd's Register EMEA, UK

Demonstration of Sloshing Physics that Underpin Industry Practices
- Industry Experiences (full-scale) and lessons-learned
- Laboratory-controlled testing (model scale)
- Comparative studies (CFD and testing)

Panelists:
L. Brosset, L, GTT, France
L. Diebold, L, Bureau Veritas, France
F. Dias, F, University College Dublin, Ireland
T. Hysing, T, DNV, Norway
Ryu, M-C, Daewoo Shipbldg & Marine Eng., Korea
Shin, Y, ABS, USA

71. HYDRODYNAMICS VIII: Floating Bodies 1 (V. 3)
Wednesday  June 23  08:00
311A, 3F
Chair: Yang, C, George Mason Univ, USA

Assessment and Calibration of Numerical Coupled Models of a Deep-draft Semisubmersible Platform Based on Model Tests
Senra, S F, Petrobras; Jacob, B P, Correa, F N, Jacovazzo, B M, Lima, A L, Lacerda, T A G, COPPE/UFRJ; Fucatu, C H, Univ of Sao Paulo, Brazil

On a Mathematical Model for the Hydrodynamic Interaction of Ships in Tandem
Souza Junior, J R, Univ of Sao Paulo, Brazil; Markt, D C, Univ de Toulon, France

Research on Hydrodynamic Interaction and Global Response of Tandem-Moored Tankers
Wang, H W, Luo, Y, Harbin Engineering Univ, China; Cheng, X M, Noble Denton Consultants, UK; Hu, K Y, Harbin Engineering Univ, China

Effect of Ship-Tugboat Hydrodynamic Interaction on the Braking Force of Tugboats
Yang, L J, Hong, B G, Dalian Maritime Univ, China; Inoue, K, Sadakane, H, Kobe Univ, Japan; Li, J M, Dalian Maritime Univ, China

Wave Crests Used in Prediction of Green Water Load and Volume on Ships Based on Spectral Response Surface Method
Zhao, J L, Yu, D Y, Deng, Y, Ocean Univ of China

Hydro-structure Model for Quasi Static Structural Response of Semi Submersible Platform
Sireta, F-X, Malenica, S, Chen, X-B, Bureau Veritas, France; Bonniol, V, Bureau Veritas, USA

72. GEOTECH IV: Foundations (V. 1)
Wednesday  June 23  08:00  311B, 3F

Chair: Tibana, S, State Univ of Norte Fluminense, Brazil

Experimental Investigation into the Influence of Keying Flaps on Keying of Plate Anchors
Gaudin, C, Simkim, M, White, D, Univ of Western Australia, Australia

Performance Assessment of Dynamically Penetrating Anchors by Physical Modelling
Brum, S A, Saboya, F, Tibana, S, Reis, R M, State Univ of Norte Fluminense
Darcy Ribeiro, Brazil

Physical Modeling of Suction Cassions: Catenary Mooring
Tibana, S, Melo, C R, Saboya, F, Reis, R M, Sobrinho, R R, del Aguila, V M, Vieira, J D, State Univ of Norte Fluminense, Brazil

Test Study of Suction Penetration for Shallow Foundation Platform
Dong, S, Chu, X J, Chi, K, Ocean Univ of China, China

Soft Soil Foundation Improvement to Resist Strength Softening Caused by Wave Force
Yan, S W, Zhao, L, Tianjin Univ; Fan, Q J, Yangtze Estuary Waterway Construction, China

Simplified Deformation Analysis of Embankment Foundation using Soil Parameters Estimated by Plasticity Index
Kamei, T, Miyazaki Univ; Shaku, T, Omoto-Gumi Co; Shibii, T, Shimane Univ, Japan

Load-Settlement Characteristics of Concrete Top-Base Foundation on Soft Ground
Kim, J Y, Jeong, S S, Lee, J H, Yonsei Univ, Korea

Large Deformation Analysis of Shallow Footings on Sand
Murthy, T G, Wang, D, Univ of Western Australia, Australia

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Wednesday  June 23  08:00  306AB, 3F

Chair: Hong, SY, Maritime & Ocean Engineering Research Inst, Korea
Co-Chair: Guo, H, CPOE, China

Installation of STP Mooring System and FPSO Hookup in South China Sea
Li, H L, Chen, Y X, Xie, W W, Xue, S H, He, C, Wang, A M, COOEC, China

Challenges in Design and Analysis of Disconnectable Turret Systems
Hijazi, F M, Prosafe Production, Singapore

Model Test Technology of a Deepwater Internal Turret FPSO
Wang, H W, Luo, Y, Harbin Engineering Univ, China; Cheng, X M, Noble Denton Consultants, UK; Su, Y M, Harbin Engineering Univ, China

Pipe Pulling Underneath FPSO Mooring
Liu, C H, Miao, C S, Zhang, Y T, Chen, J Y, Lin, S Q, Song, C N, Qu, Y J, Liang, J, Wang, J W, COOEC Shenzhen Subsea Technology, China

Investigation on Scheme of Penglai 19-3 Phase Jumpers and Cables Installation
Yan, B, Yan, L, Jiang, J F, Gong, X C, COOEC, China

Offshore Applicability Analysis of the LNG-FPSO Production Process
Wang, W C, Li, Y X, Zang, L L, Zhang, C, China Univ of Petroleum, China

Development of LNG FPSO Topside Conceptual Engineering with Application of SENSE Nitrogen Expander Liquefaction Cycle

**74. HPM V: Fatigue & Fracture 1 (V. 4)**
Wednesday June 23 08:00 307AB, 3F

Chair: Huang, Y, Dalian Univ of Tech, China

Study on Fracture Toughness Indices of Chinese Structural Steel and Weld Metal
Wang, Y Q, Zhou, H, Shi, Y J, Chen, H, Tsinghua Univ, China

Experimental Study on the Impact Toughness of Butt Weld of Steel Thick Plate at Low Temperature
Wang, Y Q, Hu, Z W, Shi, Y J, Chen, H, Tsinghua Univ, China

Low Cycle Fatigue of T-tubular Joints with Axial Loading
Hochman, M, Det Norske Veritas, Madshus, M, Aker Solutions; Berge, S, NTNU, Norway

Study on Toughness of X80 Extruded Piping Tee
Wang, P, Tubular Goods Research Center, China

Low Circle Fatigue Behavior and Micro-Analysis of X80 High-Strain Linepipe
Li, Y, Tubular Goods Research Centre, CNPC; Wu, W, Xian Jiaotong Univ; Ji, L K, Feng, Y R, Huo, C Y, Xiong, Q R, Tubular Goods Research Centre, CNPC, China

A Local Fatigue Strength Concept for the Evaluation of Post Weld Treatments of Fatigue Loaded Welds
Nitschke-Pagel, T N, Dilger, K, Univ of Braunschweig, Germany

The Effects of Wind Modelling Considerations and Wind Direction on an Accurate Fatigue Life Assessment of High Rise Tubular Structures
Jia, J B, Aker Solutions, Norway

**75. COASTAL IV: Seabed & Sediment Transport 1 (V. 3)**
Wednesday June 23 08:00 308, 3F

Chair: Liu, H, Shanghai Jiao Tong Univ, China

Simulation of Sand Waves Formation and Migration with ROMS Model
Zang, Z P, Cheng, L, Univ of Western Australia, Australia

A New Study on the Laws of Inhomogeneous Sand Motion Initiation
Bai, Z G, Yang, L, Tianjin Univ, China
The Application of PIV in Measuring the Settling Velocity of Sediment
Bai, Z G, Ca, L F, Tianjin Univ, China

Analysis of the Average Vertical Sediment-capability at Special Moment on Liuzhang Continent Tan River
Li, T M, Feng, W B, Hohai Univ, China

Flow Structure and Sediment Motion around Suspended Flexible Curtains on Seabed or Channel Bank
Li, Y H, Yu, G L, Shanghai Jiao Tong Univ, China

Sand Particle Stability with Coupling Effect of Tangential Flow and Seepage Flow
Xie, L Q, Tongji Univ, China

76. PIPELINES & RISERS IV: Integrity (V. 2)
Wednesday June 23 08:00 301AB, 3F
Chair: Park, H-I, Korea Maritime Univ, Korea

Effects of Damping and Excitation Randomness on Axial Vibration of Ultra Long Ocean Pipe with Heavy Buffer
Park, H I, Min, C H, Kwon, Y J, Korea Maritime Univ, Korea

The Nonlinear Finite Element Analysis and Optimum Design to the Thread Joint of 30-in.Marine Riser
Ye, J D, Tianjin Univ of Tech; Tan, S Y, Bohai Equipment Services; Wang, X H, Tianjin Univ of Tech; Li, S T, Bohai Equipment Services; Lin, L, Tianjin Univ of Tech, China

Research of Clamping Force of a Deepwater Flange Connecting Tool and Bearing Capacity of the Pipeline
Liu, M Z, CNPC, China

A Study of Seepage Velocity and Sediment Motion on Sandy Seabed with the Effect of Submarine Pipeline
Yang, L P, Shi, B, Han, Y, Wu, J, Sun, X F, Ocean Univ of China, China

Fatigue and Crack Analysis on Subsea Oil Pipeline
Wang, W, Sun, L P, Harbin Engineering Univ, China

Numerical Simulation of Magnetic Lux Leakage Inspection of Pipelines
Guo, B, Pan, D M, COOEC; Cao, X W, China Univ of Petroleum, China

On-bottom Stability Analysis of Offshore Pipeline - An Extensive Comparison of Codes and a New FE Model
Rezazadeh, K, Xu, L B, Bai, Y, Harbin Engineering Univ, China; Bai, Q, Technip, USA

Fault Detection in Sub-sea Pipelines Using Wavelet Transform Method
Zhang, Z D, Zhejiang Ocean Univ, China

77. RISK, SAFETY & RELIAB II: Reliability Methods (V. 4)
Wednesday June 23 08:00 302AB, 3F
Chair: Langen, I, Univ of Stavanger, Norway
Time-dependent Reliability Analysis of Offshore Platforms Based on Random Process Theory
Xie, B T, Liu, D F, Li, H J, Ocean Univ of China, China

Effect of Variation of Cover Depths on the Service Life of Marine Structures
Ying, Z Q, Lv, H, Fourth Harbor Engineering, China

Probabilistic Assessment of the Clashing between Flexible Marine Risers
He, J W, Low, Y M, Nanyang Technological Univ, Singapore

An Efficient Reliability Method for Pressurized Pipelines Subjected to Longitudinal Ground Movement
Zhou, W X, Univ of Western Ontario, Canada

Risk Analysis and Solutions Study of Pigging in Subsea Pipeline
Pan, D M, COOEC; Cao, X W, China Univ of Petroleum; Guo, B, COOEC, China

Risk-Based Assessment for the Existing Submarine Pipeline
Zhao, D Y , Wang, C, COOEC, China

A Review and Probabilistic Analysis of Limit State Functions of Corroded Pipelines
Mustaffa, Z, van Gelder, P H A J M, Delft Univ of Tech, The Netherlands

78. REES VIII: Waves 3 (V. 1)
Wednesday June 23 08:00 303AB, 3F

Chair: Kofoed, J, Aalborg Univ, Denmark
Co-Chair: Toyota, K, Saga Univ, Japan

Primary Energy Conversion Characteristics of a Floating OWC "Backward Bent Duct Buoy"
Toyota, K, Nagata, S, Imai, Y, Oda, J, Setoguchi, T, Saga Univ, Japan

Performance Evaluation of an Axisymmetric Floating OWC
Alves, M, WavEC, Portugal; Chozas, J F, Spok ApS/Aalborg Univ, Denmark; Sarmento, A J N A, WavEC, Portugal

Portuguese Grid Connected OWC Power Plant: Monitoring Report
Le Crom, I, Brito-Melo, A, Neumann, F, Wave Energy Centre; Sarmento, A, Instituto Superior Tecnico, Portugal

Numerical Simulation of an Oscillating Water Column Wave Energy Converter
Paixao Conde, J M, Univ Nova de Lisboa; Diddevier, E, LNEC, Portugal

An Improved Design for a the Radial Impulse Turbine for OWC
Pereiras, B, Castro, F, Rodriguez, M A, Univ of Valladolid, Spain

Numerical Simulation of Nonlinear Wave Interactions with a Wave Energy Converter
Hu, Z Z, Causon, D M, Mingham, C G, Qian, L, Manchester Metropolitan Univ, UK

The bioWA VE and bioSTREAM Test Unit
Kloos, G, Benitez, Z, Gonzalez, C A, BioPower Systems, Australia
79. ARCTIC SCIENCE & TECH VII: Panel (V. 2)
Tuesday June 22 14:00 305, 3F
Chair: Prinsenberg, SJ, Bedford Inst of Oceanography, Canada

Discussion

80. LNG SLOSHING VIII: Panel
Wednesday June 23 10:30 310, 3F
Chair: Kim, Y H, Seoul National Univ, Korea
Co-Chair: Maguire, J R, Lloyd’s Register EMEA, UK

Demonstration of Sloshing Physics that Underpin Industry Practices

81. HYDRODYNAMICS IX: Floating Bodies 2 (V. 3)
Wednesday June 23 10:30 311A, 3F
Chair: Ferrant, P, Ecole Centrale de Nantes, France

Numerical Comparison of Accuracy on Anchored Ship Motions Due to Mooring Force Modeling
Sasa, K, Oshima National College of Maritime Tech, Japan; Incecik, A, Univ of Strathclyde, UK

The Numerical and Experimental Study on Moonpool Water Surface Response of a Ship in Wave Condition
Kawabe, H, Hong, Y P, Park, J J, Ha, M K, Samsung Heavy Industries, Korea

Radiation and Diffraction Problem of a Floating Body in Two-layer Fluids
Koo, W C, Kim, M G, Univ of Ulsan, Korea

A Motion Analysis of Two Floaters in Shallow Water using Boussinesq Equations
Lee, H W, Lee, D Y, Seoul National Univ, Korea; Kim, B K, Shin, Y S, ABS. USA; Choi, H S, Seoul National Univ, Korea

Adding Viscous Damping for Multi-body Simulations
Voogt, A, MARIN, USA; Pauw, W H, Bunnik, T H J, MARIN, The Netherlands

Approximation Solutions for PDF of Nonlinear Rolling Motions by Partial Stochastic Linearization
Long, Z J, Pusan National Univ, Korea

A Model of the Cavity Flow Past a Hydrofoil with Accounting the Fluid Viscosity and Surface Tension Effects
Yoon, B S, Semenov, Y, Univ of Ulsan, Korea

Nonlinear Coupled Dynamic Responses of a Semi-submersible Platform
Kurian, V J, Yassir, M E A, Indra, S H H, Univ Teknologi PETRONAS, Malaysia

82. GEOTECH V: Piles & Anchors (V. 1)
Wednesday June 23 10:30 311B, 3F

Chair: Zhang, JH, Tsinghua Univ, China

Time Dependent Bearing Capacity Variation of Spudcan
Xue, J, Chow, Y K, Leung, C F, National Univ of Singapore, Singapore

Mitigation of Punch-through Failure of Spudcan by Skirted Foundation in Sand over Clay Soils
Yu, L, Kumar, A, Hossain, M S, Hu, Y X, Univ of Western Australia, Australia

Prediction of Spudcan Penetration Resistance in Multiple Soil Layers
Xie, Y, Falepin, H, Jaeck, C, Cathie Associates, Belgium

Performance of Torpedo Piles using Scaled Models in Modified Gravity
Saboya, F, Brum, S A, Tibana, S, Reis, R M, Sobrinho, R R, Vieira, J, Aguila, V M, State Univ of Norte Fluminense, Brazil

New Operation System for Swedish Weight Sounding Test Deducting a Rods Friction
Ikegame, A, Suemasa, N, Tanaka, T, Tokyo City Univ; Yamato, S, Japan Inspection Organization, Katada, T, Tokyo City Univ, Japan

Reliability Index Update for Driven Piles Based on Bayesian Theory Using Pile Load Test Results
Park, J H, Korea Inst of Construction Tech; Chung, C K, Seoul National Univ, Korea

Numerical Analysis of Flaw Sizes Detection in a Bored Pile using Surface Reflection Method
Ni, S H, Huang, Y H, Charng, J J, Lo, K F, National Cheng Kung Univ, Taiwan, China

Pullout Capacity of Suction Piles in Sand under Eccentric Vertical Loads
Bang, S C, Jones, K, South Dakota School of Mines and Tech, USA; Kim, K O, Kim, Y S, Cho, Y K, Daewoo Engineering and Construction, Korea

Centrifuge Modeling of Base Load - Displacement Response of Piles in Sand under Static Vertical Load
Zhang, J H, Zhang, Y M, Zhou, M, Tsinghua Univ, China

A Study on Surface Settlement of Gravelly Piles with Different Disposition Ways
Hsiao, D H, Yang, S S, National Kaohsiung Univ of Applied Science, Taiwan, China

83. Floating Structures & FPSO/SPAR II (V. 1)
Wednesday June 23 10:30 306AB, 3F

Chair: Liu, SM, COSL, China

Model Test of a VLCC FPSO-to-SYMS Mating Operation in Extremely Shallow Water
Wang, A M, Hao, J, COOEC; Li, X, Shanghai Jiao Tong Univ; Sun, Y Z, Li, H L, Xu, J K, COOEC, China

Virtual Simulations of VLCC Class FPSO-SYMS Mating Operation

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Wang, A M, COOEC, China; Pinkster, J, STC B.V., The Netherlands; Jiang, X Z, Li, Z G, Yu, C S, Zhu, S H, COOEC, China

Optimum Design of an Ultra-low Motion Semi-submersible Floating Oil and Gas Production System
Kim, T W, Sharma, R, Seoul National Univ, Korea

FPSO Load Condition with Multi Objective Decision Making
Vasconcellos, J M, COPPE/UFRJ, Brazil

Investigation of the Impact Pressure by Breaking Waves on FPSO Appurtenances

84. HPM VI: Fatigue & Fracture 2 (V. 4)
Wednesday June 23 10:30 307AB, 3F
Chair: Wang, K, ExxonMobil Development Co, USA
Co-Chair: Li, XW, COOEC, China

Numerical Technique for Surface Opening Displacement of an External Circular Crack in an Infinite Elastic Space
Chaiyat, S, KMUTNB; Kiattikomol, K, KMUTT, Thailand

Required Brittle Crack Arrest Toughness Kca Value with Actual Scale Model Tests
Inoue, T, Nippon Steel; Yamaguchi, Y, Nippon Kajii Kyokai; Yajima, H, Nagasaki Inst of Applied Science; Aihara, S, Tokyo Univ; Yoshinari, H, National Maritime Research Inst; Hirota, K, Mitsubishi Heavy Industries; Toyoda, M, IHI Marine United; Kiyosue, T, Kawasaki Shipbldg; Handa, T, JIEF Steel; Kawabata, T, Sumitomo Metal Industries; Tani, T, Kobe Steel, Japan

Effects of Temperature and Crack Tip Constraint on Cleavage Fracture Toughness in the Weld Thermal Simulated X80 Pipeline Steel
Xu, J, Univ of Science & Tech Beijing, China; Zhang, Z L, NTNU; Ostby, E, Nyhus, B, SINTEF, Norway; Sun, D B, Univ of Science & Tech Beijing, China

Depth Estimation of Surface Cracks by Numerical-Experimental Method Based on Crack Opening Displacement Measurement
Yue, G X, Wuhan Univ of Tech; He, Z, Wuhan Univ, China

Simplified Methodology for Fracture Integrity of Cold Formed Pipe-in-Pipe Systems
Low, A R, Don, S A, MacKellar, I C, INTECSEA UK; Pisarski, H, TWI; UK; Dugat, S, Geertsen, C, ITP Interpipe, France; Kleijne, E D, Heerema Marine Contractors Nederland, The Netherlands

A New Method for Calculating Stress Intensity Factor at Crack Tip in Finite Thickness Plates
Chen, J J, Huang, Y, Gang, L, Dalian Univ of Tech, China

Evaluation of Fracture Roughness for High Grade Pipeline Steel
Wang, J Q, Shuai, J, Jiao, Z L, Han, K J, Xu, X R, China Univ of Petroleum, China
85. COASTAL V: Seabed & Sediment Transport 2 (V. 3)
Wednesday June 23 10:30 308, 3F
Chair: Louko-georgaki, E, Aristotle Univ of Thessaloniki, Greece
Co-Chair: Wang, BL, Shanghai Jiao Tong Univ, China

Characteristics of the Wave Field in the Radial Sand Ridge Field of South Yellow Sea
Feng, W B, Yang, Y Z, Hohai Univ, China

Study on Sediment Accumulation Processes in Kirinda Fishery Harbour, Sri Lanka
Laknath, D P C, Sasaki, J, Yokohama National Univ, Japan

Ground Improvement in Deep Waters Using Dynamic Replacement
Hamidi, B, Curtin Univ of Tech, Australia; Yee, K, Menard Geosystems, Malaysia; Varaksin, S, Menard, France; Nikraz, H, Curtin Univ of Tech, Australia

Analysis on Drastic Sand Siltation in Open Channel due to Wave-induced Liquefaction in Silty Coastal Area
Xu, G H, Wang, X, Xu, G H, Zhao, Q P, Ocean Univ of China, China

Three Dimensional Flows and Solute Transport in Estuarine Reservoir
Wu, W, Liu, H, Shanghai Jiao Tong Univ, China

86. PIPELINES & RISERS V: Pipe-Soil Interaction (V. 2)
Wednesday June 23 10:30 301AB, 3F
Chair: Haigh, S K, Univ of Cambridge, UK

Effects of Environmental Loadings on Fatigue Life of Steel Catenary Risers (Using a Nonlinear Cyclic Riser-Soil Interaction Model)
Kimiaeie, M, Randolph, M, Ting, I, Univ of Western Australia, Australia

Model for Seabed Interaction with Steel Catenary Riser
You, J H, Biscontin, G, Aubeny, C, Texas A&M Univ, USA

Progress in Investigating Pipe-Soil-Fluid Interaction
Griffiths, T J, Timmins, D, Rathbone, A, J P Kenny, Australia

An Enhanced 3D Elasto-plastic Pipe-soil Interaction Model - Coupled vs Uncoupled Interaction
Hededal, O, Tech Univ of Denmark; Strandgaard, T, Geoline APS, Denmark

Balanced Three-Dimensional Modelling of the Fluid-Structure-Soil Interaction of an Untrenched Pipeline
Youssef, B S, Cassidy, M J, Tian, Y H, Univ of Western Australia, Australia

On the Value of Geotechnical Investigation in the Design of HP/HT Pipelines
Cameiro, D, Bureau Vereitas; Cardoso, C O, Petrobras; Gouveia, J, Bureau Veritas, Brazil

First Subsea Pipeline Trenching by Pipeline Plough in South China Sea
Deng, H F, Song, C N, Dai, W B, Miao, C S, COOEC, China

Vertical Loading Tests for Buried Flexible Pipe with Equivalent Ring Stiffness
Hanazawa, T, Kawabata, T, Izumi, A, Shimamoto, C, Kobe Univ; Mohri, Y, National Inst of Rural Engineering, Japan

**Evaluation of Shear Contribution in Total Uplift Resistance for Shallowly Buried Pipelines**
Wang, J K, Haigh, S K, Univ of Cambridge; Thusyanthan, I N, Mesmar, S, KW Ltd, UK

**Experimental Study of SCR-soil Interaction Near the TDP**
Li, X Z, Duan, M L, China Univ of Petroleum; Yang, X G, CNOOC; Wang, Y, Dalian Univ of Tech, China

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**87. RISK, SAFETY & RELIAB III: Impact & Damage (V. 4)**
Wednesday June 23 10:30 302AB, 3F
Chair: Fujikubo, M, Osaka Univ, Japan

**Research on Capsizing Probability of the Damaged Warship Subjected to Underwater Explosion and Random Excitations**
Hu, K Y, Ding, Y, Wang, H W, Li, J D, Harbin Engineering Univ, China

**The Response of a Floating Structure due to Underwater Explosion with Cavitation Effect**
Li, X B, Wuhan Univ of Tech, China

**Safety Assessment of Inner Hull Structure Affected by Cryogenic Temperature**
Han, S M, Bae, J H, Ha, M K, Joh, K H, Suh, Y S, Samsung Heavy Industries; Rhee, S H, Seoul National Univ, Korea

**Analysis of Ultimate Strength and Reliability for Offshore Platform Structures**
Zhang, Y K, North China Univ of Tech; Jin, W L, Zhejiang Univ, China

**A Revisit on ‘Design and Analysis of Stiffened Shell Structures for Offshore Applications’**
Das, P K, Paul, P C, Kelangath, S K, Univ of Strathclyde, UK

**Damage Detection of Offshore Platform using EMD and WVD**
Xu, C H, Chen, G M, Xie, J, China Univ of Petroleum, China

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**88. REES IX: Waves 4 (V. 1)**
Wednesday June 23 10:30 303AB, 3F
Chair: Lee, T L, Leader Univ, Taiwan, Chinae
Co-Chair: Peng, Y, Inst of Electrical Engineering, CAS, China

**Results of an Experimental Study of the Langlee Wave Energy Converter**
Pecher, A, Kofoed, J P, Aalborg Univ, Denmark; Espedal, J, Hagberg, S, Langlee Wave Power, Norway

**Hydrodynamic Analysis and Optimal Design for a Vertical Circular Wave Energy Device**

**Three Dimensional Wave Overtopping Characteristics of a Reef-type Wave Energy Converter**
Shin, S H, Hong, K Y, Nam, B W, MOERI/KORDI, Korea

Performance of a Wave Energy Converter which Utilizes a Mechanical Accumulator for Energy Smoothing
Josefsson, A, Berghuvud, A, Ahlin, K, Blekinge Inst of Tech, Sweden

Application of Restoring Force Theory to the Increasing of Wave Power Generation under Weak Fluctuations
Shih, R S, Weng, W K, Chou, C R, Tungnan Univ, Taiwan, China

Analysis of a Piston-type Porous Wave Energy Converter
Yueh, C Y, Chuang, S H, National Taiwan Ocean Univ, Taiwan, China

Response of a Small Array due to Irregular Waves: Comparison to Predictions based on Measured Regular Wave Response
Weller, S, Stallard, T, Stansby, P, Univ of Manchester, UK

Wednesday June 23 10:30 305, 3F
Chair: TBA

90. REES XII: Environment Modeling (V. 1)
Wednesday June 23 14:00 310, 3F
Chair: Kyozuka, Y, Kyushu Univ, Japan

Numerical Study on the Dynamics of River Plumes Spreading in the Southern Hemisphere Coast
Yu, Y Y, Zhang, H, Griffith Univ, Australia

Modeling the Distribution and Origin of Pollutant in North Zhejiang Coastal Areas
Cai, H W, Zhejiang Ocean Univ; Yu, J, Sun, Y L, Zhang, Y M, Zhang, X Q, Ocean Univ of China, China

Nutrients Transport in Xiangshan Bay in the East China Sea
Lu, H Q, Zhejiang Ocean Univ; Shi, G D, Environment Monitoring Station of Nibno City; Chang, K M, Zhejiang Ocean Univ, China

Changes of Sea Level under Different Increased Atmospheric CO2 Scenario in an Unstructured Grid Climate Model
Mou, L, Zhang, J L, Qiu, W J, National Marine Data & Information Service, China

Long-term Correlation Analysis between Water Quality and Plankton Abundance in the Offshore Reclamation Industrial Area, Taiwan
Chang, Y, Liou, J Y, Hwang, H H, National Cheng Kung Univ, Taiwan, China
Numerical Modeling of Oyster Larval Transport at Yunlin Coastal Area, Taiwan
Hsu, H C, Liou, J Y, Chang, Y, Huang, H Y, National Cheng Kung Univ, Taiwan, China

Salt Finger Convection at the Onset of Wind Shear
Yang, R Y, Hwung, H H, National Cheng Kung Univ, Taiwan, China

91. HYDRODYNAMICS X: Floating Bodies 3 (V. 3)
Wednesday June 23 14:00 311A, 3F

- Chair: Causon, DM, Manchester Metropolitan Univ, UK
- Co-Chair: Peng, X, COSL, China

Numerical Analysis of the Antiroll Fin/Bilge Keel Interaction during Roll Decay Motion
Broglia, R, INSEAN, Italy

Dynamic Forces during Deepwater Lifting Operations
Bøe, T, Nestegård, Det Norske Veritas, Norway

Calculation of Thrust Losses in Deepwater Offshore Platform Dynamic Positioning System
Guang, C Y, Luo, W, Wuhan Univ of Tech, China

Han, X, Xu, H X, Zhan, C S, Luo, W, Wuhan Univ of Tech, China

On Characteristics of Ship Wave in Canal
Eto, H, Nihon Univ; Yuasa, S, Fuji Sash Corp; Wada, K, Nakamura, H, Saijo, O, Nihon Univ, Japan

Investigation on the Methods Used in the Analysis of Dynamic Positioning Capability [Oral presentation]
Zhang, B W, Liang, Y H, China Classification Society, China

92. GEOTECH VI: Piles with Lateral Load (V. 1)
Wednesday June 23 14:00 311B, 3F

- Chair: Leung, CF, National Univ of Singapore, Singapore

Effect of Pile-Head Rotational Restraint on Response of Torsionally Loaded Pile Groups
Kong, L G, Jiang, L H, Zhejiang Univ; Zhang, L M, Hong Kong Univ of Science & Tech; Chen, Y M, Zhejiang Univ, China

The Capacity Characteristics of Pile and Suction Anchor in Deep Water
Li, S, Tianjin Univ; Li, Z Q, China Ship Design & Research Center; Han, Z Q, China Classification Society; Huang, J C, Tianjin Univ, China

Using Revised One-dimensional Wave Equation in Drivability Analysis for Large Diameter Steel Piles
Liu, R, Yan, S W, Tianjin Univ, China

Performance of the Excavation Supported by Steel Sheet Piles in Marine Environment
Porewater Movement Induced Damping of Marine Monopiles
Ottesen Hansen, N-E, LICengineering, Denmark

Effect of Scour on the Behaviour of Pile Foundations under Lateral Loads
Abdel-Rahman, K, Achmus, M, Leibniz Univ of Hannover, Germany; Kuo, Y S, National Pingtung Univ of Science & Tech, Taiwan, China

Investigation on Behavior of Grouted Sheet Pile Walls
Chun, S H, Song, C Y, Lee, J S, Daelim Industrial, Korea

Vertical Pullout Capacity of Torpedo Piles for Offshore Structures
Won, J Y, Morvant, M N, Fugro Consultants; Gilbert, R B, Univ of Texas at Austin, USA

Behavior of the Penetration Process of Model Jacked Pile
Li, Y, Li, J P, Tongji Univ, China

Lateral Loading Experiments on Buried Pipe using Liquefied Stabilized Soil as Backfill Material for Thrust Restraint
Okuno, S, Kawabata, T, Kashiwagi, A, Kobe Univ; Mohri, Y, National Inst for Rural Engineering; Hanazawa, T, Kobe Univ, Japan

Soil Plug Effect on Driving Piles of Offshore Oil Platform
Guo, C, Yan, S W, Tianjin Univ, China

Numerical Prediction of Truss Spar Motion in Ocean Waves
Xu, G C, Harbin Engineering Univ, China; Ma, Q W, City Univ, UK; Sun, L P, Harbin Engineering Univ, China
Malleswararao, P, Madhav Babu, M G, Andhra Univ; Sunil Kumar, P, Indian Register of Shipping; Ramachandrarao, K, Visakhapatnam Port Trust, India

A New Concept of Spar and Its Hydrodynamic Analysis
Yu, W H, Huang, W P, Ocean Univ of China, China

Coupled Response Analysis of Moving SCR and Spar Platform Based on Influence of VIV
Deng, Y, Huang, W P, Tang, S Z, Ocean Univ of China, China

Stability Analysis of Coupled Heave and Pitch Motion of Classic Spar
Li, H X, Huang, Y, Dalian Univ of Tech, China

Analysis of Coupled Heave-pitch Motion for Spar Platform under Environmental Loads
Song, S, Jun, X X, Ocean Univ of China, China

A Time Domain Analysis on the Hydrodynamic of a Truss Spar and Its Truss Members
Geng, B L, Zhang, C H, Cao, Y F, Tianjin Research Inst for Water Transportation Engineering, China

Experimental Study of Motion Behavior of Offshore Spar Platform
Liu, S X, Zhou, Y, Teng, B, Gou, Y, Dalian Univ of Tech, China

Heave and Pitch Motions of Floating Platform in South China Sea
Liu, J H, Yang, X G, Hao, Y, COOEC, China

94. HPM VII: Corrosion (V. 4)
Wednesday June 23 14:00 307AB, 3F
Chair: Kim, KY, POSTECH, Korea

Hydrogen Permeation and its Induced Cracking Characterization of Hot-Dip Galvanized Steel in Wet/Dry Cyclic Marine Atmosphere
Zhang, L D, Li, Y, Inst of Oceanology, CAS; Tang, X, China Univ of Petroleum, China

Meshless Numerical Simulation of Crack Growth Induced by Stress-assisted Corrosion in a Brittle Solid
Tang, Z B, Zhejiang Ocean Univ, China

Numerical Calculation of Cathodic Protection Potential Distribution for Ocean Construction
Liu, F G, COOEC, China

The Effect of Cathodic Hydrogen Charging and Applied Load on HIC Occurrence in HIC Free Linepipe Steels
Kim, W K, Kim, S J, Pohang Univ of Science and Tech; Jung, H G, POSCO; Kim, K Y, Pohang Univ of Science and Tech, Korea

The Role of Acicular Ferrite on the Hydrogen Induced Cracking Resistance of Linepipe Steel
Park, G T, Kim, S J, POSTECH; Jung, H G, KKPOSCO; Kim, K Y, POSTECH, Korea

Study on Application of Artificial Neural Network Algorithm based on Levenberg-Marquardt to Detection of the Anti-corrosion State of Submarine Pipeline
Lan, J, Huang, Y, Xia, W J, Luo, L P, Dalian Univ of Tech, China

Research on Detection and Quantitative Evaluation of the Anti-corrosion State of Submarine Pipeline
Wang, P, Huang, Y, Xia, W J, Luo, L P, Dalian Univ of Tech, China

An Electrochemical Evaluation on Corrosion Resistance of Anti-Corrosive Paints
Kim, Y H, Moon, K M, Yoon, J H, Korea Maritime Univ, Korea

Cavitation Erosion and Corrosion Behaviors of Various Metallic Coatings Prepared by Arc Spraying
Kim, J H, Shin, H C, RIST; Lee, M H, Korea Maritime Univ, Korea

95. COASTAL VI: Tsunami and Storm Surge (V. 3)
Wednesday June 23 14:00 308, 3F
Chair: Hiraishi, T, Port and Airport Research Inst, Japan

3D Simulation of Tsunami and Submergence Analysis of Coast
Luo, L H, Ye, J W, South China Univ of Tech, China

Coastal Vulnerability Analysis of the Saronicos Gulf
Soukissian, T H, Dounas, M, Anagnostou, C, Hellenic Centre for Marine Research, Greece

Coastal Flood Inundation Modelling with a 2-D Shallow Water Equation Solver
Wu, X Z, Hall, J, Liang, G H, Newcastle Univ, UK

Removal of Fluid Contents in a Cavity under the Effect of a Propagating Solitary Wave
Chang, C H, Ling-Tung Univ, Taiwan, China; Chu, Y T, Wang, K H, Univ of Houston, USA; Tang, C I, National Cheng Kung Univ, Taiwan, China

Hydrodynamics and Damping Performance of Mangrove Forests against Storm Waves - Model Test Results
Husrin, S, Strasinska, A B, Oumeraci, H, Hoque, A, Tech Univ Braunschweig, Germany

Coincidence Risk of Extreme Storm Surges Occurred in Adjacent Bays of Bohai Sea
Dong, S, Ji, Q L, Ocean Univ of China, China

96. PIPELINES & RISERS VI: Scours (V. 2)
Wednesday June 23 14:00 301AB, 3F

Chair: Su, TC, Florida Atlantic Univ, USA

Numerical Evaluation of Alternative Techniques for Pipeline Protection against Ice Scour
Abdalla, B A, MCS, USA

The Numerical Simulation of Local Scour around Offshore Pipeline
Cao, X F, Qin, Y L, CMPC, China

Experimental Study on Scour Protective Equipment around Pile of Bridge under Wave and Current
Li, Q, Liu, C H, Shi, Q, Zhejiang Ocean Univ, China

Field Observations of Seabed Scours around a Submarine Pipeline on Cohesive Bed
Xu, J S, Li, G X, Yang, R M, Cao, L H, Ocean Univ of China, China

Scouring around Horizontal Pipelines under Steady Flow and Protection Measure against Erosion
Pang, H L, Zhang, G, Shanghai Jiao Tong Univ, China

Controlling Junction Flow for Scouring Prevention
Su, T C, Florida Atlantic Univ, USA

Numerical Simulation of Local Scour under a Submarine Pipeline using a Cartesian Cut Cell Approach
Chen, B, Jiang, M, Han, L H, Dalian Univ of Tech, China

Flow Field Analysis and Scour Experiment Study of Subsea Pipeline on Clayed Seabed
Ren, Z Z, Fudan Univ; Yang, Y, Duan, M L, China Univ of Petroleum, China

97. WATER IMPACT (V. 4)
Wednesday June 23 14:00 302AB, 3F

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Chair: Wu, WG, Wuhan Univ of Tech, China

Slamming Forces on a Planing Hull
Qiu, W, Yang, Q, Peng, H, Memorial Univ of Newfoundland, Canada

Numerical Simulation of Water Impact by a Two-Phase Solver
Cai, W, Wuhan Univ of Tech, China; Li, T Q, Ghent Univ, Belgium

Impacting Study on the Water Entry of Hydrofoil of High Speed Catamaran
Liu, W Q, Wang, X M, Wu, W G, Wuhan Univ of Tech, China

Experimental Investigations on Slamming Impacts by Drop Tests
Shin, H K, Cho, S R, Kim, S C, Univ of Ulsan, Korea

Experimental Study of Random Wave Impact on a Horizontal Plate
Sun, Z C, Sun, J W, Liang, S X, Dalian Univ of Tech, China

Analysis of Dynamic Responses of Submarine Subjected to Underwater Explosions
Zhang, Y F, Zong, Z, Dalian Univ of Tech, China

Mechanical Properties of Offshore Structure Steel under Static and Dynamic Loading
Lee, J Y, Im, S W, RIST, Korea

Chair: Waid, R, Marine Development Assoc, USA
Co-Chair: Arii, S, Tottori Univ, Japan

Preliminary Experimental Study on LMMHD Wave Energy Conversion System

Thermal Performance Analysis of Liquid Metal Magnetohydrodynamic Wave Energy Converter
Liu, B L, Zhao, L Z, Li, J, Xu, Y Y, Inst of Electrical Engineering, CAS, China

Research and Design: An Ocean Wave Energy Fixed-Pointed Vertical Profiler Monitor and Control System Based on ARM9
Wang, J, Liu, J B, Yu, H B, Hangzhou Dianzi Univ, China

A Power Forecasting Method of Wave Power Generation in Little Wind Water Areas
Xiao, W P, Ye, J W, South China Univ of Tech, China

Analytical Study on Power Conversion System of LMMHD Wave Energy Converter
Yan, H D, Peng, Y, Xu, Y Y, Li, R, Inst of Electrical Engineering, CAS, China

Design Program for Wave Energy Converter in Buoy
Oh, J S, Jo, K J, Korea Maritime Univ, Korea
A New Deep-ocean Electric Driven Manipulator: Working System
Xiao, Z H, Xu, G H, Tang, G Y, Shen, X, Huazhong Univ of Science and Tech, China

Development of a New Underwater Manipulator Actuated by BLDC Motors
Choi, H S, Park, H I, Hong, S Y, Korea Maritime Univ, Korea

Research on Autonomous Grasping of an UVMS with Model-known Object Based on Monocular Visual System
Zhang, Q F, Gong, P L, Quan, W C, Zhang, A Q, Shenyang Inst of Automation, CAS, China

Trajectory and Attitude Control of a Tethered Underwater Robot
Wu, J M, Yu, M, Zhu, L S, South China Univ of Tech, China

Enhancement of Chitosanase Activity in Bacillus cereus ZJOU-010 using Response Surface Methodology
Chen, J, Chen, X, Fang, X B, Yu, H, Zhejiang Ocean Univ, China

Isolation, Identification and Characterization of Bacillus cereus ZJOU-010, a Chitosanase-producing Bacterium
Chen, X, Chen, J, Fang, X B, Yu, H, Zhejiang Ocean Univ, China

Salinity Acclimation of Chlorella pyrenoidosa and Its Application in Mariculture Wastewater Treatment
Hu, H Y, Liu, Y, Deng, Y B, Jin, W H, Zhejiang Ocean Univ, China

A HAB Mathematical Model of competition between Two Algae Species in the Yangtze River Estuary and its Adjacent Waters
Wang, Q, Zhu, L S, South China Univ of Tech, China

Phylogenetic Analysis of Sulfate-reducing Bacteria and Corrosion Behavior of Marine Steel under its Influence
Zhao, X D, Yang, J, Fan, X Q, Zhejiang Ocean Univ, China

Fate of Bacterial Mat in Anoxic Environment for Development of Prediction Model for Seafloor Environmental Assessment: First Report
Distribution of the Ctenophore Mnemiopsis Leidyi and Zooplankton in the Western south Caspian Sea in 2008
Bagheri, S, Mansor, M, Univ Sains Malaysia, Malaysia; Negarestan, H, Iranian Fisheries Research Org, Iran; Wan Omar, A M, Univ Sains Malaysia, Malaysia

101. HYDRODYNAMICS XI: Floating Bodies 4 (V. 3)
Wednesday June 23 16:20 311A, 3F
Chair: Li, L, American Bureau of Shipping, USA
Co-Chair: Zou, ZJ, Shanghai Jiao Tong Univ, China

Estimation of a Lay Barge RAOs Using In-Service Measured Data
Hansen, A S, Rego, V S, Petrobras, Brazil

Numerical Study of Viscous Hydrodynamic Forces on a Ship Navigating near Bank in Shallow Water
Wang, H M, Zhejiang Ocean Univ/ Shanghai Jiao Tong Univ; Zou, Z J, Shanghai Jiao Tong Univ, China

Modeling of Fully Nonlinear Wave Interactions with Submerged Moving Structures
Guerber, E, Ecole des Ponts Paris-Tech, France; Grilli, S, Univ of Rhode Island, USA; Benoit, M, Buvat, C, Ecole des Ponts Paris-Tech, France

Validation of a Numerical Method for the Study of Piston-like Oscillations between a Ship and a Terminal
Sauder, T, Kristiansen, T, MARINTEK, Norway

Numerical Simulation of Hydrodynamic Interaction Produced During the Head-on Encounter Process of Two Ships
Lo, D C, National Kaohsiung Marine Univ, Taiwan, China

A Study on Dynamic Behavior of Floating Structure with Rigid Skirts
Weng, W K, Lin, J G, National Taiwan Ocean Univ, Taiwan, China

The Grounding Protection of Ship Maneuvering in Shallow Water
Li, L, American Bureau of Shipping, USA

Propeller Hydrodynamic Performance Analysis in Oblique Flow of Dynamic Positioning System
Liang, H, Dalian Univ of Tech, China

102. GEOTECH VII: Soil Improvement (V. 1)
Wednesday June 23 16:20 311B, 3F
Chair: Hayakawa, K, Ritsumeikan Univ, Japan Japan
Co-Chair: Gao, GY, Tongji Univ, China

Investigation on Bearing Capacity of Sand Layer after Jetting
Wang, J J, China Oil Services Ltd; Zhao, J, Duan, M L; Zhao, T F, Dai, B, China Univ of Petroleum, China

Effect of Water on the Characteristics of Lightweight Air-Mixed Soil
Lee, Y J, Kim, T H, Korea Maritime Univ, Korea

Ground Improvement Material Obtained by Mixing Waste Melting Slag and Rock Muck with Slaked Lime
Tsushima, M, Akita National College of Tech; Komatsu, J, Okuyama Boring Co; Oikawa, H, Ogino, T, Akita Univ, Japan
Hardening Property of Irrigation Pond Sludge mixed with Stone Sludge and Cement
Yamanaka, M, Suzuki, J, Hasegawa, S, Kagawa Univ; Iwahara, H, Shikoku Industry & Tech Promotion Center; Takahashi, S, Takahashi Sekizai Corp, Japan

Effects of Fiber on Swell of Expansive Soils
Al-Mhaidib, A I, King Saud Univ, Saudi Arabia

Investigation of Improvement of Taipei Clays by Oedometer Surcharge Loading
Feng, T W, Chung Yuan Christian Univ, Taiwan, China

103. Floating Structures & FPSO/SPAR IV (V. 1)
Wednesday June 23 16:20 306AB, 3F
Chair: Kim, M H, Texas A&M Univ, USA

Second Order Air Gap Simulation of a TLP Platform under Extreme Sea States
Yan, F S, Zhang, D G, Harbin Engineering Univ; Liu, R M, China Classification Society, China

Effect of Additional Deck Load and Mooring Configuration on the Response of Tension Leg Platform (TLP) Model
Malleswararao, P, Madhav Babu, M G, Andhra Univ; Sunil, K P, Indian Register of Shipping; Ramachandrarao, K, Visakhapatnam Port Trust, India

Study on the Effect of Additional Tanks on Dynamic Response of TLP
Wan, G W, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

Development of Drillship’s Moonpool Drag Mitigation Device
Son, H J, Ahn, S M, Seo, J S, Samsung Heavy Industries, Korea

Development of a New Design Method for Very Large Floating Structures by using a Database of Hydroelastic Response
Zi, G S, Kim, J G, Korea Univ, Korea; Taghipour, R, NTNU, Norway; Lee, P S, KAIST, Korea

Nonlinear Analysis of Superstructures on Very Large Floating Structures with Semi-rigid Connections
Song, H C, Korea Maritime Univ; Lee, E S, MIDAS IT; Jung, G H, Korea Maritime Univ, Korea

Operational Modal Analysis of Existing Floating Oceanic Architectural Buildings; Restaurant and Pier
Naruta, S, Eto, H, Nihon Univ; Saito, K, Toyota Technical Development; Matsunaga, H, Saijo, O, Nihon Univ, Japan

Dynamic Analysis of a Floating Raft System for Oyster Culture
Huang, C C, Lee, K Y, National Sun Yat-sen Univ, Taiwan, China

Numerical Simulation for Floating Fish Cage Systems
Sueyoshi, M, Nakamura, M, Kyushu Univ; Masuda, H, Kabota-C I Co; Misaka, M, Kyushu Univ, Japan

104. HPM VIII: Adv in Welding Technology 1 (V. 4)
Wednesday June 23 16:20 307AB, 3F
Study on Automated Hyperbaric Welding Applied in Sub-sea Pipelines Repair
Zhou, C F, Jiao, X D, Xue, L, Chen, J Q, Beijing Inst of Petro-chemical Technology; Huang, X M, CNOOC Gas & Power, China

The New Progress on Research and Application of Underwater Welding Technology
Fei, Y, Du, Y S, Du, F T, COOEC, China

Subsea Pipeline Hyperbaric Welding Technology
Pan, D M, Ma, H X, Feng, H, COOEC, China

On the Weld-Induced Deformation of Thin Panels to Welding Process
Lee, J S, Univ of Ulsan, Korea

The Properties of Pulsed Gas Metal Arc Welding for A5083 in LNG Cryogenic Storage Vessel
Ding, W B, Liu, W, Zhang, S Y, COOEC, China

Study on Mini-cap Local Dry Underwater Flux-Cored Arc Welding and Online Control of Weld Penetration
Shi, Y H, Wang, G R, South China Univ of Tech, China

Development of Covered Electrode with Good CTOD Properties for YSS500MPa Class High Strength Steel
Peng, H, Makoto, O, Kojiro, N, Kobe Steel, Japan

Discussion about the Electromagnetic Stirring Coil in Twin-wire Submerged Arc Welding
Xu, W, Cao, J, Ding, W B, COOEC, China

Comparative Study on Breaking Wave Forces on Vertical Walls with Cantilever Surfaces
Kisacik, D, van Bogaert, P, Troch, P, Ghent Univ, Belgium

A Basic Study on Fender Monitoring System for Floating Pneumatic Fenders at Ship-to-Jetty and Ship-to-Ship Operations
Shuu, Y, Kaneko, M, Nakatani, K, Sakakibara, S, The Yokohama Rubber, Japan

The Investigation of Wave Forces around Multiple Large Surface-piercing Circular Cylinders Mounted on a Shoal
Hsiao, S S National Taiwan Ocean Univ; Wen, C C, Hungkuang Univ; Chang, C M, Fang, H M, National Taiwan Ocean Univ, Taiwan, China

Vibration Control of Tuned Mass Damper for Bridge Tower under Wave Action
Chen, S Y, Liu, G, Wu, H B, Liu, T C, CCCC Highway Consultants, China

Dynamic Response of a Sea-crossing Suspension Bridge by Wave Forces
Experimental Research on Wind and Wave Coupling Action on Pier
Liu, H Y, Chen, H B, Tianjin Research Inst for Water Transportation Engineering, China

Wave-current Loads on Piles and Slab of Piled Foundation
Liu, H, Wang, B L, Shanghai Jiao Tong Univ, China

Experimental Study on Wave Forces Acting on Partially Perforated Caissons Located on a Rubble Mound Foundation
Xia, Z S, Sun, D P, Dalian Univ of Tech; Liu, Y, Ocean Univ of China; Li, Y C, Lu, W, Wan, Q Y, Dalian Univ of Tech, China

Investigation of Breaking Wave Action on Vertical Breakwater
Yuan, J, Chen, B, Kang, H G, Dalian Univ of Tech, China

106. PIPELINES & RISERS VII: Free Span & Risers (V. 2)
Wednesday June 23 16:20 301AB, 3F
Chair: Kan, WC, ExxonMobil Development Co., USA
Co-Chair: Li, P, COOEC, China

Free Span Pipeline Integrity Monitoring
Lim, F K, 2H Offshore, UK; Lim, T K, 2H Offshore, Malaysia; An, P, 2H Offshore, UK

The Stability Analysis for Spanning Pipelines under Wave/Current Loading
Han, F, China Univ of Petroleum; Guan, Y H, CNOOC; Duan, M L, Yang, Y, Zhao, T F, China Univ of Petroleums, Tong, H, Fudan, Univ, China

Submarine Pipeline Spanning Mechanism on Continental Shelf in the South China Sea
Gao, W, Cao, L H, Yang, R M, Ocean Univ of China, China

Cost Optimization of Small Diameter Flowline System on Uneven Seabed
Hove, F, Klepp, N M, Sørside, T H, Reinertsen AS, Norway

Optimization Design for Deepwater Risers with Fatigue Constraints
Yang, H Z, Shanghai Jiao Tong Univ; Li, H J, Ocean Univ of China, China

Fatigue Reliability Analysis of Marine Risers by Approximation
Yang, H Z, Shanghai Jiao Tong Univ; Li, H J, Ocean Univ of China, China

107. COLLISION & PENETRATION (V. 4)
Wednesday June 23 16:20 302AB, 3F
Chair: Shibue, T, Kinki Univ, Japan

Research on the Characteristics of Cylindrical Fragment Penetrating Steel/Ceramic/Steel Compound Target
Huang, Y L, Wu, W G, Li, X B, Xu, S X, Kong, X S, Wuhan Univ of Tech, China

Analysis of Anti-Ship Missile Penetrating the Side Frame
Xu, S X, Wu, W G, Li, X B, Kong, X S, Huang, Y L, Wuhan Univ of Tech, China
A Study on Numerical Simulation for Collision Response of a Semi-Submersible Platform
Li, Y., Huang, Y., Liu, G., Zhang, Q., Li, H. X., Dalian Univ of Tech, China

A Fuzzy-Logic-Based SAMSON Model Assessing Dynamic Risk of Ship Collision
Mou, J. M., Wuhan Univ of Tech, China

The Optimization Analysis of Pile Protection Devices for Qiantang River Bridge
Pan, J., Wu, W. G., Xu, M. C., Wuhan Univ of Tech, China

Non-linear Finite Element Simulation to the Collision between Anti-collision Equipment and the Bridge
Peng, S., Wu, W. G., Xia, Z. Y., Wuhan Univ of Tech, China

A Micro-Macro Model of Collision Process of Anchored Ships
Wen, X. F., Lu, J. S., Zhejiang Ocean Univ; Xiao, J. S., Wuhan Univ of Tech, China

Research on Failure Characteristics of a Frustum Projectile Penetrating a Cross Stiffened Plate
Xu, S. X., Wu, W. G., Li, X. B., Kong, X. S., Huang, Y. L., Wuhan Univ of Tech, China

Falling Behavior Simulation a Seated Passenger at the Accidental Collision of a Very High-speed Ship
Shibue, T., Hayami, T., Sawai, T., Ohmasa, M., Hirokawa, N., Kinki Univ, Japan

Fatigue Safety of Berthing Monopile against Vessel Impacts
Li, Y., Univ of British Columbia, Canada; Zhou, S. L., Wang, D. Y., Chongqing Jiaotong Univ, China

108. REES XI: Ocean & Wind Energy - International Progress (V. 1)
Wednesday June 23 16:20 303AB, 3F
Chair: Sarmento, A, Instituto Superior Tecnico, Portugal

Integration of Wave and Offshore Wind Energy in a European Offshore Grid

Integrated Asset Management Practices for Offshore Wind Power Industries: A Critical Review and a Road Map to the Future
El-Thalji, I., Linnaeus Univ, Sweden; Liyanage, J. P., Univ of Stavanger, Norway

Current Status of Marine and Hydrokinetic Energy Activities at the National Laboratories in the United States
Li, Y., Thresher, B., National Renewable Energy Lab; Jepsen, R., Sandia National Lab; Copping, A, Pacific Northwest National Lab, USA

Current R&D Status of Ocean Energy in Japan
Nagata, S., Saga Univ, Japan

Assessment of Wave Energy Potential in Taiwan: The Fuzzy Analytic Hierarchy Process
Lee, T L, Lin, H M, Leader Univ, Taiwan, China; Jeng, D S, Univ of Dundee, UK; Tsai, S H, Leader Univ, Taiwan, China

Natural Energy Resources in the Coastal Region: A Utilization Concept
Waid, R L, Marine Development Associates, USA

Current Status and Future Perspective of Wave Energy Converter Development in Korea
Hong, K Y, Shin, S H, Hong, S W, MOERI/KORDI, Korea

109. UNDERWATER III: Robot Fish & Propulsion (V. 2)
Wednesday 14 June 23 16:20 305, 3F
Chair: Kato, N, Osaka Univ, Japan

Development of a Motion Control System using Phototaxis for a Fish Type Robot
Sumoto, H, Yamaguchi, S, Kyushu Univ, Japan

Stability Control and Energy Saving for Propulsion of a Biomimetic Autonomous Underwater Vehicle
Guo, J H, National Taiwan Univ, Taiwan, China

Design and Development of Amphibious Vehicle with Fin Actuators
Kato, N, Kawamura, Y, Shimoya, J, Yoshiida, E, Suzuki, H, Senga, H, Osaka Univ, Japan

Development and Performance Evaluation of a Two-joint Mission-scale Robotic Fish
Liang, J H, Hu, Y H, Wen, I. Wang, T M, Beihang Univ, China

A Model for Deflection of Tail Fluke of a Dolphin based on Contour Lines
Sun, Q L, Morikawa, H, Shinshu Univ; Ueda, K, Miyahara, H, Okinawa Churaumi Aquarium; Nakashima, M, Tokyo Inst of Tech, Japan

Kinematics, Hydrodynamics and Energetic Research of Robotic Fish Maneuvering based on a Novel Experimental Method
Li, W, Beihang Univ; Hao, W G, Tsinghua Univ; Mial, W T, Hong, L J, Beihang Univ, China

Analysis of Motion of Sea Turtle with Prosthetic Flippers

Numerical Study on Propulsion Mechanism of a Rigid and Flexible Pectoral Fin
Wang, Z L, Su, Y M, Harbin Engineering Univ, China

Analysis of Fluid-Structure Interaction of Oscillating Flexible Fin
Sun, X Q, Kato, N, Suzuki, H, Osaka Univ, Japan

Development of Large Angle/High-Speed Orientation Control Technique for Underwater Vehicle
110. REES XIV: Environment Monitoring (V. 1)
Thursday June 24 08:00 310, 3F
Chair: Zhang, H, Griffith Univ, Australia

One RS-Image-Registration Method in Rapid Changing Areas: The Modern Yellow River Delta as a Case Study
Chu, Z X, Ocean Univ of China; Hu, Y, Third Inst of Oceanography; Zhao, Q, National Marine Environmental Monitoring Center; Yang, X H, Ocean Univ of China, China

A Real-time Monitoring System for Marine Environment Parameters Based on GPRS Technique
Fan, S S, Yang, C J, Hu, R, Zhejiang Univ, China

A Consideration on In-situ Measurement Method of Matters at Sea Area
Arai, R, Nishiyama, T, Iwasa, N, Nakatani, N, Otsuka, K, Yamazaki, T, Osaka Prefecture Univ, Japan

Development of Measurement Instrument of Dissolved Inorganic Nitrogen and Dissolved Inorganic Phosphorus
Arai, R, Akita, K, Nakatani, N, Otsuka, K, Osaka Prefecture Univ; Nishiyama, T, A Private Limited MULTI, Japan

Long Term Monitoring of Geo-Environmental Condition in Tidal Flat of the Ariake Sea, Japan
Moqsud, M A, Bushra, Q S, Suettsu, D, Saga Univ, Japan

111. HYDRODYNAMICS XII: CFD 1-NWT (V. 3)
Thursday June 24 08:00 311A, 3F
Chair: Wan, DC, Shanghai Jiao Tong Univ, China

Generation of Arbitrary Wave Field in Arbitrary Configured Wave Basin Composed by Element Absorbing Wave Makers
Minoura, M, Muto, T, Osaka Univ; Okuyama, E, Akishima Lab (Mitsui Zosen); Naito, S, Osaka Univ, Japan

Bragg Reflection of Nonlinear Waves by a 2D Numerical Wave Tank
Koo, W C, Choi, K, Univ of Ulsan, Korea

Wave Absorption by Mesh Adjustment in Numerical Wave Tank
Han, T, Zhang, Q H, Tianjin Univ, China

Generation of Irregular Waves for Marine Application by Piston Type Wave Maker
Elangovan, M, Sahoo, G, Ram, K, Indian Register of Shipping, India

Numerical Simulation of Wave Diffraction by a Vertical Cylinder using VOF Method
Nam, B W, Hong, S Y, Sung, H G, MOERI/KORDI, Korea

Development of an Efficient 3D Numerical Wave Tank to Assist in Large Scale Laboratory Experiments
Grilli, S T, Univ of Rhode Island; Nimmala, S, Yim, S, Oregon State Univ, USA
Coupling of NWT and Large Eddy Simulation for Wave-induced Sediment Transport
Harris, J C, Grilli, S T, Univ of Rhode Island, USA

Numerical Simulation of 2-D Nonlinear Wave
Wang, D L, Zhao, Y H, Dalian Maritime Univ, China

112. GEOTECH VIII: Modeling & Simulation (V. 1)
Thursday June 24 08:00 311B, 3F
Chair: Gao, FP, Inst of Mechanics, CAS, China

Finite Element Analysis on Soil Disturbance Zone Caused by the Penetration of the Mudfork in Soft Clays
Jung, Y H, Kim, H S, Mok, Y J, Kyung Hee Univ, Korea

Nonlinear Numerical Study on Performance of Cofferdam with Double-row Steel Sheet Piles
Cui, C Y, Dalian Maritime Univ; Huang, J, Luan, M T, Li, M G, Dalian Univ of Tech, China

A FEM Model for Wave-Induced Residual Pore Pressure Buildup around Pile Foundations
Yang, B, Li, X J, Gao, F P, Inst of Mechanics, CAS, China; Zang, J, Univ of Bath, UK

Application of Finite Element Analysis in the Prediction of Consolidation Settlement of Foundation Structure on Highly Voided Soil
Lee, D, Liu, S L, Nash, I, Cooper, P, Evans, N, ITCSEA (UK), UK

Numerical Analysis of Offshore Skirted Foundations on Double Layered Clays
Yu, L, Ramadan, C, Hu, Y X, Univ of Western Australia, Australia

113. Floating Structures & FPSO/SPAR V (V. 1)
Thursday June 24 08:00 306AB, 3F
Chair: Kotobayama, W, Kyushu Univ, Japan

Modal Properties of a Scaled Model of Floating Structure
Park, S Y, Kim, E H, Cho, S H, Korea Maritime Univ, Korea

An Introduction to Engineering and Construction of TMT Deepwater Drillship
Kim, Y D, Shin, J R, Shin, Y K, Daewoo Shipbldg & Marine Engineering, Korea

Dynamical Response Analysis of the Mooring System for a Deepwater Semi-submersible Platform
Zhou, S, Nie, W, Harbin Engineering Univ, China

Wave Frequency Dependent Added Mass and Hydroelasticity of Flexible Floating Structures
Michailides, C, Loukogeorgaki, E, Angelides, D C, Aristotle Univ of Thessaloniki, Greece

Hydrodynamic Interactions between Container Ship and Mobile Harbor with SPM-Buoy Station
Kim, M H, Bae, Y H, Kang, H Y, Texas A&M Univ, USA; Kim, Y B, KyungNam Univ, Korea

Offloading from Both Sides of a Super-container Ship to Land and Floating Harbor; Predicted vs. Experimental Results
Kang, H Y, Kim, M H, Texas A&M Univ, USA; Kim, J H, Park, W S, Chae, J W, KORDI, Korea

On Ship Motion and Mooring System Analysis for Moored Floating Structures in Deep Water
Lin, F, Lloyd's Register, Canada; Ge, C H, Lloyd's Register, UK

Analysis of Mooring Effects on Floating Structures
Chen, P I, Lee, J F, National Cheng Kung Univ, Taiwan, China

Wind-wave Tank Test on Dynamic Response of HYSY-981 Semi-submersible Platform under the Combined Action of Wind and Wave
Zhu, H, Harbin Inst of Tech; Ou, J P, Dalian Univ of Tech, China

114. HPM IX: Adv in Welding Technology 2 (V. 4)
Thursday June 24 08:00 307AB, 3F
Chair: Lee, JS, Univ of Ulsan, Korea

Design of New Oil and Gas Pipeline All-position Auto-welding Machine Orbit
Zhang, J H, CNPC, China

Numerical Investigation on Temperature Distribution of Submarine Pipeline Welding
Fang, Z T, Tang, D Y, Niu, H L, CNPC, China

Residual Stresses and Near Surface Material Condition of Welded High Strength Steels after Different Mechanical Post-weld Treatments
Nitschke-Pagel, T N, Dilger, K, Eslami-Chalandar, H, Univ of Braunschweig, Germany

Experimental Study of Residual Stress for A105 Steel Thick Plate in Butt Welding
Yan, R J, Lei, J J, Qi, Y, Luo, B L, Li, P, Wuhan Univ of Tech, China

A Study on Residual Stress Distribution and Relaxation in Welded Components
Polezhayeva, H, Lloyd’s Register EMEA, UK; Kang, J K, Daewoo Shipbldg & Marine Engineering; Lee, J H, Yang, Y S, Inha Univ, Korea; Kadryavtsev, Y, Integrity Testing Lab, Canada

Welding Deformation Analysis of Friction Stir Welded Aluminum Alloy Structures using Equivalent Load Method based on Inherent Strain
Jang, C D, Jang, Y J, Kim, Y T, Seoul National Univ, Korea

Advances in FSW Materials Development
Liu, Q Y, Steel, R, MegaDiamond, USA

115. COASTAL VIII: Tide & Estuary (V. 3)
Thursday June 24 08:00 308, 3F
Chair: Zhang, J, Univ of Dundee, UK
Co-Chair: Juang, J-T, Chienkuo Tech Univ, Taiwan, China

The Effect of Wave on Tidal Current and Its Application in Bohai Sea
Wang, S P, Zhao, J, Qin, Y L, CNPC, China

Comparison of Tidal Waves Propagation Characteristic and Their Influence Factors in Parallel Humen and Jiaomen Channel
Xu, W M, Bao, Y, Wu, C Y, Sun Yat-sen Univ, Taiwan, China

Internal Tide: A Consideration Estimating Tidal Current for Coastal Engineers
Nakaza, E, Rouf, M A, Univ of the Ryukyus, Japan

Comparisons of Tidal Flow Simulation between Eastern and Western Coasts of Taiwan
Kao, J H, Lee, J F, National Cheng Kung Univ, Taiwan, China

Determination of Amphidromic Point Tidal Constituent M2 at Yellow River Estuary
Zhou, J, Li, P L, Yan, Y F, Ocean Univ of China, China

The Effects on Tidal Characteristics in Yangtze Estuary due to Yangtze Estuary Comprehensive Regulation Projects and Sea-level Rise
Gong, Z, Zuo, C B, Hohai Univ; Ji, H Y, Sheng, G M, Shanghai Investigation, Design & Research Inst, China

Analysis of Interannual Variability of the Cold Eddy in East China Sea Based on an Intensity Index
Lan, J, Wang, G, Sun, S W, Ocean Univ of China, China

A 2D FVM Shallow Water Hydrodynamic Model Based on the GRP Scheme
Li, S W, Wang, W, Huang, X Y, Tianjin Univ, China

116. PIPELINES & RISERS VIII: Installation (V. 2)
Thursday June 24 08:00 301AB, 3F
Chair: Zhao, DY, COOECC, China

Numerical Simulation of the Installation Procedure of an Optical Fiber Cable in the Negro River - Amazon Rainforest
Machado Jr, O O, PETROBRAS; Jacob, B P, Lima Jr, M H A, COPPE/UFRJ; Rocha, R S, PETROBRAS, Brazil

Installation Analysis of Top Tensioned Risers
Li, W F, Zhang, Q, Huang, Y, Yang, H B, Dalian Univ of Tech, China

Configuration of Submarine Pipeline for Deepwater S-lay Technique
Gong, S F, Zhejiang Univ; Li, Z G, COOECC; Chen, Y, Jin, W L, Zhejiang Univ, China

An Advance Tow Method for Pipeline Installation
Baghernejad, M, Nikkhaah, A, SLT-Engineering, Malaysia

Numerical Model for Evaluation of Strain Concentration of Pipelines in S-lay
Wang, L Z, Yuan, F, Guo, Z, Zhejiang Univ, China
Characteristics of China Offshore Seismic Disasters and their Impact on the Offshore Oil and Gas Exploration
Jiang, Y J, COOEC; Wang, X, Shandong Univ of Science and Tech, China

Data Logging of Dangerous Seismic Events by the Laser Strainmeter and Broadband
Dolgikh, S G, V I Il’ichev Pacific Oceanological Inst, Russia

Some Work Results of a Wide-band Regional Monitoring System
Yakovenko, S V, V I Il’ichev Pacific Oceanological Inst, Russia

Seismic Active Earth Pressure on Quay Walls due to Partially Submerged Backfill
Lin, Y L, Zhang, M X, Shanghai Univ; Li, X X, Shanghai Tunnel Eng & Rail Transit Design & Research Inst, China

Numerical Simulation for Seismic Response of Tianjin Haihe River Immersed Tube Tunnel
Xiang, G W, Ye, G L, Wang, J H, Shanghai Jiao Tong Univ, China

Earthquake Resistant Building with Adobe
Tafahomi, M, Delta C Design; De Jong, W M, INI-Research, The Netherlands; de Graaff, E, Aalborg Univ, Denmark

Inelastic Earthquake Analysis of Reinforce Concrete Offshore Components
Mullapudi, T R, Ayoub, A S, Univ of Houston, USA

The Response of Movable Crane on Platform under Earthquake Load
Kong, X S, Wu, W G, Li, X B, Xu, S X, Wuhan Univ of Tech; Duan, Z X, CNOOC Energy Technology, China

Climate Change Driven Research and Innovation in Marine Technology - Lloyd's Register's Overview
Cheng, F Y, Lloyd’s Register, UK

Structure Safety Assessment of Floating Dock for Building of 13,000 TEU Container Ship

Study on a Load History Generation Method based on "Estorm Model" for Fatigue Assessment of Ship Structural Members
Prasetyo, F A, Osawa, N, Sawamura, J, Osaka Univ; Tsutumi, S, Sumitomo Heavy Industries Marine & Engineering; Shigeta, K, Osaka Univ, Japan

Verification of Ship Performance Evaluation Method by Actual Ship Test
Sogihara, N, Ueno, M, Hoshi, K, Tsujimoto, M, Sasaki, N, National Maritime Research Inst, Japan

**Evaluation of Springing-induced Hull Girder Loads for Container Carrier and Ore Carrier**
Choi, J H, Jung, B H, Lee, Y W, Hyundai Heavy Industries, Korea

**On the Assessment of Whipping Induced Fatigue Load of Container Carriers**
Wang, S, American Bureau of Shipping, USA

**Cavitation Erosion Tests of Marine Coatings in Model Scale**

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**119. UNDERWATER IV: Deep-Ocean Sensors 1 (V. 2)**

**Thursday June 24 08:00**

Chair: Penteado, D, Petrobras, Brazil

**Infrastructure for Mobile Sensor Network in the Singapore Coastal Zone**

**The Research of Probability of Extended Ground Objects Inspection by the Use of Tethered Underwater Vehicle in the Mode of Movement Conjointly with Delivery Vessel**
Kostenko, V V, Mokeeva, I G, Inst of Problems of Marine Technologies, FEB RAS, Russia

**Flow Simulation of Ducted Marine Propulsor of Underwater Robot**
Lee, D H, Park, W G, Pusan National Univ; Park, H I, Korea Maritime Univ, Korea

**Open Control System for Remotely Operated Underwater Vehicle**
Gao, Y Z, Ye, J W, Chen, Y M, Liang, F L, South China Univ of Tech, China

**Research on the Control System of a Class of Human Occupied Vehicle**
Liu, K Z, Shenyang Inst of Automation, CAS, China

**Study on Hydrodynamic Performance of a Dish-Shaped Underwater Vehicle**
Wang, Z L, Su, Y M, Yu, X Z, Li, N Y, Zhang, X, Harbin Engineering Univ, China

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**120. REES XV: Oil Spill in Offshore & Ice (V. 1)**

**Thursday June 24 10:30**

Chair: Pavlenko, VI, Arctic Research Center, RAS, Russia

**Development of a Coastal Oil Spill Prediction System that Incorporates 3D Wave-current Interactions**
Guo, W J, Wang, Y X, Dalian Univ of Tech, China

**Development of an Oil Recovery Device for Ice-covered Waters: NMRI-ORDICE**  
Izumiyama, K, Kanada, S, Shimoda, H, Wako, D, Matsuzawa, T, National Maritime Research Inst; Otsuka, N, North Japan Port Consultants, Japan

**Experimental and Numerical Study on Oil Leakage from Submerged Holes in Still Oil Tank**  
Lu, J S, Gong, X W, Wen, X F, Zhejiang Ocean Univ, China

**Hydrodynamics Analysis of Spilled Oil Tracking Buoy Based on Spilled Oil Model Improved**  
Wang, T L, Dalian Maritime Univ, China

**The Oil Spill Forecast and Decision Support System**  
Wei, A, Zhu, S F, CNOOC-COES; Wei, Z X, Wang, Y G, State Oceanic Administration, China

**Steady Sailing Performance of Spilled Oil Tracking Autonomous Buoy with Yacht Shape**  
Hiratsuka, M, Kato, N, Senga, H, Suzuki, H, Osaka Univ; Yoshie, M, Fujita, T, Tanaka, T, Port and Airport Research Inst, Japan

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**121. HYDRODYNAMICS XIII: CFD 2-Particle Method (V. 3)**  
Thursday June 24 10:30 311A, 3F

**Chair:** Choi, HS, Seoul National Univ, Korea

**SPH Model of Solitary Waves Shoaling on a Mild Sloping Beach**  
Gao, R, Ren, B, Dalian Univ of Tech, China

**On SPH Simulation of Dam Breaking**  
Liu, M B, Inst of Mechanics, CAS, China

**Numerical Simulation of Focused Wave Generation using CIP Method**  
Zhao, X Z, Hu, C H, Kyushu Univ, Japan; Sun, Z C, Dalian Univ of Tech, China

**Simulation of 2D Breaking Waves by using Improved MLPG_R Method**  
Venkatachalam, S, Ma, Q W, City Univ, UK

**SPH on the GPU: Simulating 3D Free Surface Impacts**  
Liberti, L, ISPRA, Italy; Basic, J, Univ of Split, Croatia

**An Eulerian Scheme with Lagrangian Particle for Evaluation of Seakeeping Performance of a Ship in Nonlinear Wave**  
Mutsuda, H, Hiroshima Univ; Kurihara, T, ABS; Takayuki, K, Baso, S, Doi, Y, Hiroshima Univ; Shi, J G, Tsuneishi Shipbldg, Japan

**Gridless Simulation for Incompressible Flow with Free Surface**  
Park, J C, Pusan National Univ, Korea; Jeong, S M, Univ of Tokyo, Japan; Huh, J K, Hanjin Heavy Industries & Construction, Korea

**Motion and Drifting of 2D Floating Bodies with Bilge-keel by Moving Particle Semi-implicit (MPS) Method**  
Park, J C, Lee, B H, Pusan National Univ, Korea; Kim, M H, Texas A&M Univ, USA; Koo, W C, Lee, K R, Univ of Ulsan, Korea
Simulation of Wave Run-up and Overtopping Near a Seawall using Particle Level Set Method
Huang, C J, National Cheng Kung Univ, Taiwan, China

122. GEOTECH IX: Reinforced Earth (V. 1) Thursday June 24 10:30 311B, 3F
Chair: Chen, S, Huafan Univ, Taiwan, China

Risk Assessment of Sediment Disaster Due to Sloping Field Development
Chen, Y R, Hsieh, S C, Ni, P N, Chang Jung Christian Univ; Hui, Y W, Cheng Shiu Univ, Taiwan, China

An Establishment on the Risk Assessment Model of Sediment Disasters Occurred at Taitung County in the Eastern Taiwan
Chen, K T, National Cheng Kung Univ; Tsai, K J, Chang Jung Christian Univ; Shieh, C L, National Cheng Kung Univ, Taiwan, China

Experimental Studies on the Effects of Ground Reinforcement Method Combining the Driving of Steel Pipe Piles with Foundation Work
Kitaoka, S, Shinseikomu Co; Fujii, M, Watanabe, K, Tokai Univ; Jinno, K, Kondo, T, Shinseikomu Co, Japan

Case Study on the Reinforcement and Management System after Large Scale Landslide Occurred in Cut Slope in Korea
Shin, H Y, Kim, K O, Kim, Y J, Bae, K Y, Daewoo E&C, Korea

Effect of Reclamation between Islands in Complex Tidal Estuary on Hydrodynamic Sediment Environment
Li, M G, Tianjin Research Inst of Water Transport Engineering, China

Numerical Analysis on Bearing Mechanism of Very Soft Ground Covered with Geotextile
Ahn, D H, Oda, K, Tokida, K, Osaka Univ, Japan; You, S K, Myongji College, Korea

Seismic Performance Modeling of Geosynthetic Reinforced Earth Structures
Chen, J W, National Cheng Kung Univ; Lee, W F, National Taiwan Univ of Sciences & Tech; Chang, M S, Chen, C C, National Cheng Kung Univ, Taiwan, China

123. Jacket & Jackup I (V. 1) Thursday June 24 10:30 306AB, 3F
Chair: Boswell, L, The City Univ, UK

Optimization of Legs Batter in Fixed Offshore Platforms
Pirooz, M D, Shorkaeri, M M N, Univ of Tehran; Daghigh, M, South Pars Co, Iran

Convenient Installation for Transition Piece of Jacket Platform
Gong, C, Xie, Y Y, Li, L X, Wang, Y, COOEC, China

Dynamic Response of Jack-Up Units Reevaluation of SNAME 5-5A Four Methods
Dynamic Response Research of Multi-Purpose Offshore Mobile Jack-Up Platform
Gan, J, Wu, W G, Li, H, Pan, J, Wuhan Univ of Tech, China

Nonlinear Water-Structure Interaction of Fixed Offshore Platform in Extreme Storm
Azarhoushang, A, Curtin Univ of Tech, Australia

Study on the Dynamic Characteristics of the Mega-frame Platform with Fluid-solid Coupling Interaction
Zhao, D, Liu, X K, Tan, H, Cai, D M, Univ of Jinan, China

Degradation of Fixed-Jacket Type Offshore Structure Integrity
Harris, A, Nasution, A, Bandung Inst of Tech, Indonesia

Application of Adaptive Technique in Jack-ups’ Cabin Noise Control
Lin, Y H, Wu, W G, Wuhan Univ of Tech, China

Research on Cabin Noise Prediction and Control of Jack-up Platform by Hybrid Finite Element Method
Wu, Y G, Gan, J, Wu, W G, Wuhan Univ of Tech, China

124. HPM X: Advanced Characterization (V. 4)
Thursday June 24 10:30 307AB, 3F
Chair: Kwon, DI, Seoul National Univ, Korea

In-situ Study of Phase Transformation in Steel during Welding
Komizo, Y, Terasaki, H, Osaka Univ, Japan

In-situ Observation of Behavior of Retained Austenite in Supermartensitic Steel using High Temperature Laser Scanning Confocal Microscopy and X-ray Diffraction by Synchrotron Radiation
Zhang, S Y, Terasaki, H, Komizo, Y, Osaka Univ, Japan

The Effective Thermal Conductivity Analysis and Measurement for Cryogenic Insulation Materials

Nondestructive Mechanical Property Assessment Using Instrumented Indentation Testing
Kim, Y C, Kim, K H, Kim, J Y, Kwon, D I, Seoul National Univ, Korea

Using Instrumented Indentation to Evaluate High-temperature Mechanical Properties
Park, C P, Kang, S K, Jo, W J, Kwon, D I, Seoul National Univ, Korea

Using the Instrumented Indentation Technique (IIT) on API Pipe
Ro, D S, Hong, J H, Frontics Inc; Kwon, D I, Seoul National Univ, Korea

Evaluation of Residual Stress Perpendicular and Parallel to a Weld by Instrumented Indentation
Song, W S, Choi, M J, Jo, W J, Kwon, D I, Seoul National Univ, Korea

125. COASTAL IX: Port & Harbor (V. 3)
Thursday June 24 10:30 308, 3F
Chair: Hong, KY, Maritime & Ocean Engineering Research Inst, Korea

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**Co-Chair:** Lin, JG, National Taiwan Ocean Univ, Taiwan, China

**Conceptual Design of Smart Harbor**  
Shin, H K, Kim, M S, Univ of Ulsan, Korea

**Study on the Port Entering Channel Width of Very Large Container Carrier**  
Wei, C, Xin, Y Q, Ming, X Y, Min, M J, Wuhan Univ of Tech, China

**Safety Evaluation Method of Ship Berthing at Pontoon under Strong Current from Viewpoint of Ship Motions**  
Sasa, K, Oshima National College of Maritime Tech; Hibino, T, Kim, K H, Hiroshima Univ, Japan

**Adjustable Berthing and Trestle Facility for High Tidal Range Region**  
Jo, C H, Chae, K S, Song, S H, Inha Univ; Cho, W C, ChungAng Univ, Korea

**Simulation Research of Hydrodynamic in Channels after Blocking Inlet Engineering for Deep-water Harbor in Islands Group**  
Li, B, Zhang, Z, Tianjin Research Inst for Water Transport Engineering; Zhang, Y, Tianjin Univ, China

**Improving Method of Estimating Irregular Wave Overtopping Rates**  
Li, C L, China Univ of Petroleum, China

**Numerical Simulation of Waves Overtopping a Breakwater**  
Hsieh, C M, National Kaohsiung Marine Univ; Hwang, R R, Academia Sinica, Taiwan, China

**Analysis on the Reflection Coefficient of Irregular Wave on the Superstructure of Perforated Breakwaters**  
Chen, X F, Kong, L, Li, Y C, Dalian Univ of Tech, China

**Developed Analytic Hierarchy Process Applying in the Comparison of Layout Alternatives of Port Projects**  
Shi, H D, Shao, M, Ocean Univ of China, China

**Physical Modeling to Measure the Efficiency of Pontoon Breakwaters**  
Ajiwibowo, H, Yuanita, N, Zamzami, R, Bandung Inst of Tech, Indonesia

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**126. PIPELINES & RISERS IX: Design & Repairs (V. 2)**  
**Thursday, June 24, 10:30**  
**301AB, 3F**

**Chair:** Gresnigt, AM, Delft Univ of Tech, The Netherlands  
**Co-Chair:** Qi, M, COSL, China

**Advanced Design Challenges for Deepwater Pipe-in-Pipe Lateral Buckling**  
Wei, J W, Burnett, C, Cooper, P, Nash, I, El-Gebaly, S, INTECSEA (UK), UK

**Local Analysis Method of Flexible Pipe and Its Application to Buckling**  
Huang, K, Diao, W G, Ji, A, Consultants, USA

**Pipeline Expansion and Contraction Engineering**  
Kershenbaum, N Y, Subsea Engineering Solutions, USA
An Efficient Global, Local and Solid Finite Element Modeling Approach for Pipeline Expansion Spools
Wang, J, Banneyake, R, Xu, J F, J P Kenny, USA

Pipe Bend Pressure-Moment Capacity Curves
Bjerkes, M, Alsos, H, Hval, M, Reinertsen AS; Solem, O, Acergy; Lange, H, SINTEF; Holden, O M, Statoil, Norway

New Developments of Cutting Theories with Respect to Offshore Applications
Miedema, S, Delft Univ of Tech, The Netherlands

The Influence of the Strain Rate on Cutting Processes
Miedema, S, Delft Univ of Tech, The Netherlands

In-line Inspection Technology and Methods of Subsea Pipeline
Pan, D M, Liu, M Y, Guo, B, COOEC, China

Pipe in Pipe Underwater Repair Technology
Ma, H X, Pan, D M, Jiang, J, COOEC, China

Gravity-type Atmosphere-Pressure Dry-cabin Structure Design and Application of Sub-sea Pipeline Repairing
Feng, H, Pan, D M, Cheng, E H, Zheng, Q M, COOEC, China

127. EARTHQUAKE & ENGINEERING 2 (V. 4)
Thursday June 24 10:30 302AB, 3F
Chair: Kawano, K, Kagoshima Univ, Japan

128. ADVANCED SHIP TECH II (V. 4)
Thursday June 24 10:30 303AB, 3F
Chair: Mathai, T, The Glosten Assoc, USA
Co-Chair: Xia, WJ, COSL, China

Numerical Approaches on Elastic Lateral Torsional Buckling of Beams Containing Web Openings
Karampour, H, Shanmugam, N E, Univ Kebangsaan Malaysia, Malaysia

Study on Longitudinal Ultimate Strength Reliability of Ship Hull Girder
Jin, C G, Wang, X, Lin, Y, Dalian Univ of Tech, China

Development of ISUM Shear Plate Element and its Application to Progressive Collapse Analysis of Container Ship Models
Pei, Z, Tsuneishi Shipbldg; Takami, T, Osaka Univ; Gao, C, Fu, J, Tsuneishi Shipbldg; Tanaka, Y, National Maritime Research Inst; Iijima, K, Fujikubo, M, Osaka Univ, Japan

Development of Isoparametric ISUM Plate Element
Pei, Z, Yu, J, Tsuneishi Shipbldg; Nakamura, K, Tanaka, S, Okazawa, S, Hiroshima Univ; Fujikubo, M, Osaka Univ; Yao, T, Tsuneishi Shipbldg, Japan

Plastic Limit State Design Criteria for Corrugated Bulkhead
Li, L, American Bureau of Shipping, USA
A Practical Method for Ship Structural Optimization
Yu, Y Y , Lin, Y, Ji, Z S, Dalian Univ of Tech, China

An Approach to Optimisation in Ship Structural Design using Finite Element and Optimisation Techniques
Kaeding, P, Lindemann, T, Univ of Rostock, Germany

Parametric Study of Mesh Refinement in Isogeometric Analysis
Lee, J S, An, Y N, Roh, M I, Yoon, B S, Chang, K S, Univ of Ulsan, Korea

A Simple Accurate Method for Stress Intensity Factor Calculation using Non-singular Finite Elements
Holdbrook, S J, KBR, UK

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129. UNDERWATER V: Deep-Ocean Sensors 2 (V. 2)
Thursday       June 24  10:30

Chair: Patrikalakis, NM, MIT, USA
Co-Chair: Li, Y P, Shenyang Inst of Automation, CAS, China

A Robust and Adaptive Underwater Obstacles Recognition Based on Fuzzy Clustering Algorithm
Song, X, Zou, Z J, Shanghai Jiao Tong Univ, China

Research on the Relevant Parameters of Phase Conjugation Arrays Applying in Sound Localization
Liu, S, Li, S, Dalian Univ of Tech, China

The Calibration of the USBL Sensors for Long-range Precision Underwater Positioning
Yu, M, Wahan Univ of Tech; Hui, J Y, Sun, D J, Harbin Engineering Univ, China

A Study on the Equalizers in the Multi-carrier Modulation for High Speed Underwater Wireless Communication
Lee, O H, Han, J W, Kim, K M, Korea Maritime Univ; Chun, S Y, Agency for Defense Development, Korea

Application of Laser-interference Methods to Oceanologic and Hydroacoustic Research
Shvets, V A, V I Il’ichev Pacific Oceanological Inst, Russia

First Sea Trial of Beam-steering Synthetic Aperture Sonar
Sawa, T, Hyakudome, T, Watanabe, Y, Tsukioka, S, Watanabe, K, Omika, S, Takatsuto, M, JAMSTEC, Japan

Deep-ocean Data Acquisition using Underwater Sensor Network
Penteado, D, Petrobras; Pedroda, A C P, Costa, L H M K, COPPE/UFRJ, Brazil

Introduction to a Prototype System of Dense Underwater Wireless Sensor Networks
Wang, S, Tan, M, Inst of Automation, CAS, China

Design of Three-component Magnetometer for Seafloor Observatory
Zhang, X T, Chen, Y, Zhejiang Univ; Liu, J B, Hangzhou Dianzi Univ, China
130. REES XVI: Environment Assessment (V. 1)
Thursday June 24 14:00 310, 3F

Chair: Sayed, M, National Research Council, Canada

Environmental Benefits from Thermal Destruction of HFC-23
Tai, M, Shaukat, A, Ellinas, C, Mott MacDonald, UK

Optimization Layout of Tangdao Bay Yacht Harbor in terms of Numerical Analysis of Marine Dynamic and Sedimentation Environment
Liang, B C, Yang, L L, Liu, Y, Ocean Univ of China, China

Application of 3D Porous Water Quality Model in Pollution Research of Coastal Environment
Wang, Y, Tianjin Research Inst for Water Transport Engineering, China

Effect of Human Activity to the Long-term Variation of Nutrients in the Sishili Bay of Yantai, China
Wang, U J, Liu, D Y, Dong, Z J, Di, B P, Yantai Inst of Coastal Zone Research, CAS, China

Effect of Ground Vibration Reduction Caused by Monorail Traffic by using Scrap-tire Isolation Walls
Kashimoto, T, Kashimoto, Y, OAK Co; Hayakawa, K, Matsui, T, Ritsumeikan Univ, Japan

Environmental Assessment for Ocean Energy Schemes: Case Studies and Useful tools
Simas, T C, Moura, A C, Wave Energy Centre, Portugal; Norris, J, European Marine Energy Centre; Batty, R, Wilson, B, Scottish Association for Marine Science; Thompson, D, Univ of St. Andrews; Harrison, G, Univ of Edinburgh, UK

Environmental Changes in the Arctic and Development of Transcontinental Transportation
Pavlenko, V I, Glukhareva, E K, Arctic Research Center, RAS, Russia

Salinity Gradient Conversion
Knyazhev, V V, Inst of Marine Technology Problems, FEB RAS, Russia

131. HYDRODYNAMICS XIV: CFD 3 (V. 3)
Thursday June 24 14:00 311A, 3F

Chair: Grilli, S, Univ of Rhode Island, USA

Numerical and Experimental Investigation of Turbulent Flow around a Vertical Circular Cylinder
Gao, F, Manchester Metropolitan Univ; McGovern, D, Lancaster Univ; Mingham, C G, Manchester Metropolitan Univ; Ilie, S, Lancaster Univ, UK

Numerical Studies on Green Water Effects
Yang, C, Lu, H D, Lohner, R, Georgia Mason Univ, USA

Research on 3D Modeling and CFD Analysis of Performance in Open Water of Skewed Propeller
Huang, S Q, Li, T L, Dalian Univ of Tech, China

Surface Panel Method for the Design of Marine Rudders
Bulgarelli, R, Wan, D C, Shanghai Jiao Tong Univ, China
Numerical Simulation of High Seakeeping Hybrid Monohull Hydrodynamics
Yao, Z G, Qin, Y L, CNPC; Li, J D, Harbin Engineering Univ, China

CFD-based Automatical Optimization of Bulbous Bow Lines
Zhan, C S, Liu, Z Y, Feng, B W, Wuhan Univ of Tech, China

Numerical Navigation for a Ship in Simulation of Waves
Shiotani, S, Kobe Univ; Sasa, K, Oshima National College of Maritime Tech; Terada, D, Hiroshima National College of Maritime Tech; Makino, H, Shimada, Y, Kobe Univ, Japan
Ulsan, Korea

Numerical Analysis on Added Resistance of Ships
Kim, Y H, Kim, K H, Seoul National Univ, Korea

132. GEOTECH X: Reclamation & Environment (V. 1)
Thursday June 24 14:00 311B, 3F
Chair: Kim, SS, Hanyang Univ, Korea

Evaluation of Nuclear Gauge for Use with Coastal Calcareous and Volcanic Soils
Brandes, H G, Felkel, A J, Domrique, J D, Univ of Hawaii, USA

Spatial Variability of Reclaimed Land Deposits
Ashmawy, A K, UAE; Rabens, G H, Universal Engineering Sciences, USA; Freitag, G, Keller Grundbau, UAE

Prediction on the Effect of Reclamation by ECOMSED Model
Wu, R H, Zhejiang Ocean Univ, China

New Investigation Method to Estimate Waste Properties of Existent Landfills
Hachimura, T, Japan Environmental Sanitation Center; Yamanaka, M, Kagawa Univ; Ohno, H, Kankyo Chishitsu Co; Hasegawa, S, Kagawa Univ, Japan

Settling and Self-Weight-Consolidation Characteristics of the Composite Material Mixed with Coal Ash as an Alternative Geotechnical Material
Bae, K T, Shin, H Y, Kim, K O, Kim, Y J, Daewoo E&C, Korea

A Study on the Mechanical and Chemical Characteristics of Pohang Area Mudstone as Material for Reclamation
Lee, K H, Konyang Univ; Jung, D S, Joongbu Univ, Korea

Acceleration Effect of Self-Weight Consolidation of Dredged and Reclaimed Ground with PBD
Lee, S, Univ of Soul, Korea

Numerical Modeling of Granular Debris Flow using Discontinuum Approach
Ku, C Y, National Taiwan Ocean Univ; Yang, H C, Sinotech Engineering Consultants, Taiwan, China

Stochastic Modeling for Buoyant Solute Transport in the Seabed
Lin, C K, CECI Engineering Consultants; Lin, J G, Weng, W K, National Taiwan Ocean Univ, Taiwan, China
Sanitary Landfilling for Solid Wastes and Leaching Prevention in Landfill Areas- Metap Project for Cities Trabzon and Rize in Turkey
Turker, E, Cure, E, Ozturk, N, Karadeniz Tech Univ, Turkey

133. Jacket & Jackup II (V. 1)
Thursday June 24 14:00 306AB, 3F
Chair: Duan, ML, China Univ of Petroleum, China

Mathematically Modeling the Main Dimensions of Self-elevating Drilling Units Based on BP Neural Network
Wang, Y L, Lin, Y, Ji, Z S, Chen, M, Dalian Univ of Tech, China

Dynamic Response and Reliability Evaluations of an Offshore Platform with Pile-soil Foundation System Due to Wave and Seismic Forces
Park, M S, Univ of Ulsan, Korea; Kawano, K, Kagoshima Univ, Japan; Choi, Y R, Koo, W C, Univ of Ulsan, Korea

Fatigue Damage Research of the Jacket Platform under Complex Loads
Shi, C W, CNPC Offshore Engineering; Duan, M L, China Univ of Petroleum, China

Nonproportional Damping Identification in Offshore Structures from Modal Testing Data
Liu, F S, Li, H J, Ocean Univ of China, China

Jacket Launch and Self-Upending Analyses with Small-Hole Flooding Scheme
Hi, M, Li, H L, Wu, Z Q, Yu, W T, Qian, J W, Wang, A M, COOEC, China

Estimating Modal Parameters from Free Vibration Response of Offshore Platforms
Li, P, Hu, S L J, Univ of Rhode Island, USA; Li, H J, Ocean Univ of China, China

Using Modal Frequencies for Damage Assessment in Offshore Jacket Structures
Hu, S J, Univ of Rhode Island, USA; Wang, J R, Li, H J, Ocean Univ of China, China

134. HPM XI: Composite Materials (V. 4)
Thursday June 24 14:00 307AB, 3F
Chair: Tsakalakos, T, Rutgers Univ, USA

Constitutive Modeling of Reinforced Concrete and Prestressed Concrete Structures Strengthened by Fiber Reinforced Plastics
Hu, H T, Lin, F M, Liu, H T, Huang, Y F, Pan, T C, National Cheng Kung Univ, Taiwan, China

Study on Debonding Prediction Model of RC Beam Flexurally Strengthened with Prestressed FPR
Xie, J H, Guangdong Univ of Tech; Huang, P Y, South China Univ of Tech; Hu, R L, CCCC Forth Harbour Engineering; Guo, Y C, Guangdong Univ of Tech, China

Experiment Study on the Flexural Capacity of Damaged RC Beams Strengthened with CFRP on Different Corrosion Levels
Hu, R L, Su, L W, Wang, Y Y, Ministry of Communications; Xie, J H, Guangdong Univ of Tech, China

Effect of Mid-Span Cracks on Interfacial Stresses of RC Beam Strengthened with FRP
Guo, Y C, Huang, H L, Li, L J, Deng, J, Zhong, G Q, Guangdong Univ of Tech, China

FRP Wrapped Concrete in Salt-containing Environments
Karpate, H, Wheat, H G, Jirsa, J O, Fowler, D W, Whitney, D P, Univ of Texas at Austin, USA

Study on the Chloride Ion Interruption Performance of the Concrete with Admixtures
Jin, M H, Park, D C, Korea Maritime Univ, Korea

Study of Chloride Diffusion in Concrete Structures Using Three-Dimensional Finite Element Method
Tian, M L, Wang, J B, Tang, Z B, Li, Q, Zhejiang Ocean Univ, China

135. COASTAL X: Breakwaters and Dikes (V. 3) Thursday June 24 14:00 308, 3F
Chair: Lin, MC, National Taiwan Univ, Taiwan, China

Numerical Simulation of the Dynamics of Porous Breakwaters under Linear Waves
Zhang, H, Griffith Univ, Australia

Numerical Modelling of Wave Motion and Seabed Response around a Submerged Porous Breakwater
Zhang, J S, Wang, B, Jeng, D S, Univ of Dundee, UK

Tilting of Caisson Breakwater by Wave Impact
Lee, F H, National Univ of Singapore; Zhang, X Y, American Bureau of Shipping; Leung, C F, National Univ of Singapore, Singapore

On Waves Propagating over a Barrier-type Submerged Breakwater
Lan, Y J, Hsu, T W, Chen, C Y, National Cheng Kung Univ, Taiwan, China

Wave Transformation between a Submerged Breakwater and a Seawall
Tsai, C P, National Chung Hsing Univ; Chen, H B, Chihlee Inst of Tech; Chen, H Y, National Chung Hsing Univ, Taiwan, China

Diffusion of Waves Propagating over a Series of Submerged Breakwaters
Tsai, L H, Inst of Transportation; Wen, C C, Hungkuang Univ, Taiwan, China

Numerical Study of Solitary Wave Propagating over a Vertical Thin Barrier
Wu, Y T, Hsiao, S C, National Cheng Kung Univ, Taiwan, China

Instability Analysis and Prevention of Hydraulic Sheeting Pile Dike in Coastal Area of the Yellow River Delta
Xu, G H, Zhao, Q P, Liu, W J, He, F R, Ocean Univ of China, China

Field Survey of Cracks Occurred on Old and Age-advancing Concrete Armored Coastal Dike
Yoshida, Y, Chubu Univ; Yamauchi, Y, Yamauchi Construction; Iwata, K, Chubu Univ, Japan

Estimation Irregular Wave Runup on Sloping Dike
Juang, J T, Chienkuo Tech Univ; Lin, C F, Liu, W G, Fen-Chia, Univ, Taiwan, China

136. PIPELINES & RISERS X: Pipeline Design (V. 2)
Thursday June 24 14:00
301AB, 3F

Chair: Moshagen, H, BHM Engineering Services, Norway

The Status Quo of Tapping Machine Equipment and the Application in Offshore Oil Development in China
Zhao, B J, Zhang, J H, Wang, K K, CNPC, China

Research on Control Technology of Trajectory Tracking for Robotic Welding
Wang, K K, CNPC, China

SPH Simulation of Hydrodynamic Forces on Sub-sea Pipelines
Abdolmaleki, K, J P Kenny, Australia

Consideration for On-bottom Stability of Unburied Pipelines Using Force-resultant Models
Tian, Y H, Cassidy, M J, Youssef, B, Univ of Western Australia, Australia

Exact Solutions for Curved Beams with Various Boundary Conditions under Thermal Load
Li, X F, Zhao, Y H, Dalian Maritime Univ, China

Towards a Computational Tool for the Synthesis and Optimization of Submarine Pipeline Routes
Jacob, B P, COPPE/UFRJ; Rocha, D M, Cardoso, C O, Petrobras; de Lima, B P, Albrecht, C H, COPPE/UFRJ, Brazil

Life Prediction Model and Integrity Management Software for Defect Submarine Pipelines
Chen, Y F, Lu, M X, Univ of Science and Tech Beijing, China

Experimental Study on the Function of Flexible Spoilers in Protecting Submarine Pipeline
Han, Y, Shi, B, Yang, L P, Wu, J, Sun, X F, Ocean Univ of China, China

137. OFFSHORE SYSTEMS & DESIGN I (V. 1)
Thursday June 24 14:00
302AB, 3F

Chair: Capanoglu, C, I.D.E.A.S., Inc, USA

Risk Assessment and Analysis Based on Offshore Decommissioning Platform & Jacket Removal
Tang, H J, Li, M X, Tian, Y H, COOEC, China

Research and Development of Seafloor Shallow-hole Multi-coring Drill
Wan, B Y, Changsha Inst of Mining Research; Zhang, G, Wuhan Univ of Tech; Huang, X J, Changsha Inst of Mining Research, China

Model Experiments on Stressed Grouted Clamps by an Expansive Agent for Offshore Construction
Shi, X, Yang, B, Liu, K F, Li, H J, Ocean Univ of China, China

Compact Process Control System for Simplified Offshore Platform
Liu, J E, Liu, H Y, Huang, F X, COOEC, China

Experimental Study on a Stable Platform System for Shipborne Helicopter
Chen, Y M, Ye, J W, Gao, Y Z, Liang, F L, South China Univ of Tech, China

Hydraulics Parametric Analysis and Downhole Pressure Estimation in Managed Pressure Drilling
Yang, X W, Zhou, Y C, Fang, S L, CNPC, China

Hydrodynamic Behavior of a Gravity Cage with Frame Anchor System in Irregular Waves
Xu, T J, Dong, G H, Zhao, Y P, Li, Y C, Dalian Univ of Tech; Gui, F K, Zhejiang Ocean Univ, China

138. ADVANCED SHIP TECH III: Propulsion (V. 4)
Thursday June 24 14:00 303AB, 3F
Chair: Minoura, M, Osaka Univ, Japan

Development of a New Energy-Saving Tanker with Non-Ballastwater and Podded-Propulsors - Part 1: Resistance of the Newly Proposed Ship
Tatsumi, T, Nihei, Y, Ikeda, Y, Osaka Prefecture Univ, Japan

Development of a New Energy-Saving Tanker with Non-Ballastwater and Podded-Propulsors - Part 2: Propulsion Systems of the Newly Proposed Ship
Asano, M, Ikeda, Y, Nihei, Y, Iwamoto, Y, Osaka Prefecture Univ, Japan

A Study for the Small Coastal Fishing Boats of Propulsion System
Park, R S, Univ of Ulsan, Korea

Computation of Steady and Unsteady Propeller Vortex Flow with RANS Solutions
Qiu, E, Peng, H, Liu, L, Mintu, S, Memorial Univ of Newfoundland, Canada

139. UNDERWATER VI: AUV & UUV 1 (V. 2)
Thursday June 24 14:00 305, 3F
Chair: Nakamura, M, Kyushu Univ, Japan

Neural Networks Based Motion Control in Longitudinal Plane for AUV
Sun, X J, Wang, Y H, Zhang, H W, Yang, Y, Tianjin Univ, China

An Immune Genetic Algorithm for AUV Local Path Planning
Xu, H L, Shenyang Inst of Automation, CAS, China

Neural Networks Based Attitude Decoupling Control for AUV with X-Shaped Fins
Sun, X J, Wang, S X, Zhang, H W, Wang, Y H, Tianjin Univ, China

Conceptual Design of an Autonomous Underwater Vehicle with Blended-Wing Body
Hu, Z Q, Lin, Y, Shenyang Inst of Automation, China

EKF-Based Nonlinear Hydrodynamic Parameters Estimation for AUVs
Liu, J Z, Suleiman, S, Univ of Southampton; Furlong, M, National Oceanography Centre, UK

New Buoyancy Engine for Autonomous Vehicles Observing Deeper Oceans
Kobayashi, T, Asakawa, K, JAMSTEC; Watanabe, K, Ino, T, Amaiike, K, Iwamiya, H, Tachikawa, M, Tsurumi Seiki Corp; Shikama, N, Mizuno, K, JAMSTEC, Japan

Motion Control of AUV “MR-XI” for Following Observation Line
Nakamura, M, Kyushu Univ; Hyakudome, T, Yoshida, H, Ishibashi, S, Aoki, T, JAMSTEC, Japan

A CCD Underwater Photogrammetric Technique for Trajectory Detecting of an Underwater Towed Vehicle
Chen, Y M, Ye, J W, Wu, J M, Gao, Y Z, South China Univ of Tech, China

140. REES XVII: Storage & Diffusion (V. 1)
Thursday June 24 16:20 310, 3F
Chair: Matsui, T, Ritsumeikan Univ, Japan

Density Measurement and Modeling of Aqueous Carbon Dioxide Solution in Underground Conditions
Zhang, Y, Song, Y C, Chang, F, Zhu, N J, Dalian Univ of Tech, China

The Studies of CO2 Injected into Porous Media Filled with Water by MRI
Zhao, Y C, Song, Y C, Yang, M J, Dalian Univ of Tech, China

Study on New Shore Contamination by Polystyrene of Marine Debris – Investigations of Taiwan-
Amamiya, K, Sato, H, Saito, K, Nihon Univ, Japan; Ou, C M, Lan Yang Inst of Tech, Taiwan, China; Lejano, B A, De La Salle Univ, Philippines; Che, Q M, Peking Univ, China

Dependency on Stability of Vertical Turbulent Diffusivity of Passive and Active Scalars in Stationary Homogeneous Stratified Turbulence
Hirabayashi, S, Sato, T, Univ of Tokyo, Japan

Prediction of Turbulent Scalar Fluxes at a Shear-free Gas-liquid Interface based on Surface Divergence
Nagaosa, R, AIST, Japan

Effect of Nitrogen Impurity on CO2 Transport for Marine Geological Storage
Huh, C, Kang, S G, Cho, M I, Baek, J H, MOERI/KORDI, Korea

Experimental Observation on the Bubble Plume of CO2 Discharge in Homogeneous and Two-layer Density Stratified Sea Water
Shiau, B S, Li, W H, National Taiwan Ocean Univ, Taiwan, China

DIFIS Concept for the Removal of Oil from Ship Wrecks - Hydrodynamic Scale Model Tests for Operational, Survival and Offloading Conditions and System Deployment
Cozijn, H, MARIN, The Netherlands
141. HYDRODYNAMICS XV: CFD 4 (V. 3)
Thursday June 24 16:20 311A, 3F

Chair: Zhong, WJ, COOEC, China

VMS-LES of Turbulent Backward Facing Step Flow

A Cartesian Ghost-Cell Method for Moving Boundary Problems
Ma, J H, Qian, L, Causon, D M, Gu, H B, Mingham, C, Manchester Metropolitan Univ, UK

RANS Simulations of Hydrodynamic Forces in Irregular 2D and 3D Sea States using the SWENSE Method
Monroy, C, Bonnefoy, F, Ducroz, G, Rousset, J-M, Gentaz, L, Ferrant, P, Alessandrini, B, Ecole Centrale de Nantes, France

Modeling of Wave Breaking and Wave-Structure Interactions by Coupling of Fully Nonlinear Potential Flow and Lattice-Boltzmann Models
Janssen, C, Krafczyk, M, Tech Univ Braunschweig, Germany; Grilli, S T, Univ of Rhode Island, USA

Numerical Simulations with Parallel Computation for Anti-Corrosion Systems of Ocean Structures
Huang, Y, He, Q Y, Wang, P, Liu, G, Zhang, Q, Li, H X, Dalian Univ of Tech, China

Application of OpenFOAM to Simulate Three-dimensional Flow Past Single and Two Tandem Circular Cylinders
Cao, H J, Wan, D C, Shanghai Jiaotong Univ, China

Numerical Investigation on Hydrodynamic Characteristics of a Planning Hull
Chen, S L, Ma, Q W, City Univ, UK; Yang, S L, Jiangsu Univ of Science and Technology, China

High Resolution Computation of Free Surface Flows Using a Level Set Approach
Gu, H B, Causon, D M, Mingham, C G, Qian, L, Gao, F, Manchester Metropolitan Univ, UK

Numerical Study on Interaction of Dam-break Flow and Porous Media

An Improved Immersed Boundary Method for Simulating Wave-Structure Interactions
Huang, C J, National Cheng Kung Univ, Taiwan, China

Numerical Simulation of Breaking Solitary Wave Impact on a Structure using BEM and VOF Models
Mokrani, C, Abadie, S, Univ de Pau et Pays de l’Adour; Zibouche, K, C S T, France; Grilli, S, Univ of Rhode Island, USA

CFD Simulation for Propeller Performance under Seaway Wave Condition

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Numerical Simulation of Wave Energy Converters using Eulerian and Lagrangian CFD Methods
Westphalen, J, Greaves, D M, Hunt-Raby, A, Univ of Plymouth; Williams, C J K, Univ of Bath; Taylor, P H, Univ of Oxford; Hu, Z Z, Manchester Metropolitan Univ; Omidvar, P, Univ of Manchester; Causon, D M, Mingham, C, Manchester Metropolitan Univ; Stansby, P K, Rogers, B D, Univ of Manchester, UK

142. GEOTECH XI: Slope Stability & Field Tests (V. 1)
Thursday June 24 16:20 311B, 3F
Chair: Brandes, HG, Univ of Hawaii, USA

Development of a Coal Ash Placement Method
Kim, J H, Han, T G, Cho, S D, Korea Inst of Construction Tech; Chun, B S, Hanyang Univ, Korea

Simulation of Gas Effect on Submarine Slope Stability
Hu, G H, First Inst of Oceanography, China

Stability Analysis of Channel Slope Based on FEM Strength Reduction
Zhang, K Y, Shi, J Y, Yin, Z Z, Hohai Univ, China

Study on Application of Discontinuous Deformation Analysis on the Stability Analysis of Slopes
Chen, S, Huafan Univ, Taiwan, China

A Landslide Loss Model for the Hot Spring District
Lee, Y F, Toko Univ; Chi, Y Y, Chang Jung Christian Univ, Taiwan, China

Applicability of Electric Resistivity Method for the Quality Evaluation of a Soil-cement Column
Fujii, M, Watanabe, K, Tokai Univ; Kubo, Y, Minagawa, K, Arai, M J, System Measure Co; Kitamura, K, Kensho Co; Yamashita, T, Yamashita Industry, Japan

Development and its Applicability of Portable Ground Bearing Capacity Device
Iwahara, H, Shikoku Industry & Tech Promotion Center; Yamanaka, M, Ishikawa, T, Kagawa Univ; Nakayama, N, Landex Co, Japan

Study on the Empirical Relations for Lateral Movement of Soft Soils by Field Measurement
Kim, D K, Sangmyung Univ, Korea

Measuring the Groundwater Level Using a Hole of the Swedish Weight Sounding Test
Kim, C H, Hokoku Engineering; Fujii, M, Tokai Univ; Tei, K, CreatecEngineering Consultants, Japan

Site Monitoring and Numerical Analysis to a Shield Tunnel through the Seawall
Chen, N, Ye, G L, Wang, J H, Shanghai Jiao Tong Univ, China

143. Jacket & Jackup III (V. 1)
Thursday  June 24  16:20  306AB, 3F

Chair:  Teng, B, Dalian Univ of Technology, China  
Co-Chair:  Wu, J-F, American Bureau of Shipping, Singapore  

Effect of Structural Modelling Assumptions on the Pushover Capacity of Spudcan Foundations  
Cassidy, M J, Bienen, B, Univ of Western Australia, Australia  

Offshore Pile Drivability Analysis Based on Changing Soil Structure Strength  
Yao, T, Yang, X G, Zhang, X W, COOEC, China  

Spudcan Foundation Performance: Theoretical and Observation  
The, K L, National Univ of Singapore; Handidjaja, P, Braemar Falconer Pte Ltd, Singapore  

Impact of Jack-up Jetting on Pull-out Load  
Cao, S J, China Oil Services Ltd; Hu, Z H, Duan, M L, China Univ of Petroleum; Song, L S, China Oil Services Ltd; Zhao, T F, China Univ of Petroleum, China  

Proactive Methods for Analysis of Punch-through of Jack-up  
Dai, B, Duan, M L, Zhao, T F, Li, C L, Wang, F, China Univ of Petroleum, China  

Analysis of Punch-through by Combining Numerical Calculation and Punching Shear Method  
Song, L S, China Univ of Petroleum; Li, C L, China Oil Services Ltd; Duan, M L, Zhao, T F, China Univ of Petroleum, China  

A Method for Destroying Harder Soil through Disposal of Soil under Jack-up Spudcan by Jetting  
Duan, M L, Dai, B, China Univ of Petroleum; Cao, S J, China Oilfield Services Ltd; Zhao, T F, Wang, F, Li, C L, China Univ of Petroleum, China  

144. HPM XII: Composites & Coatings (V. 4)  
Thursday  June 24  16:20  307AB, 3F  

Chair:  Wheat, HG, Univ. of Texas at Austin, USA  
Co-Chair:  Kim, YH, Korea Maritime Univ, Korea  

Research of High Temperature Tolerance Latex Slurry System  
Hou, W, Sun, F Q, Gao, Y H, Huo, M J, Wang, J D, China National Petroleum Offshore Engineering, China  

A Study on the Development of Carbon Fiber Reinforced Composites as the Heating Element  
Kim, Y H, An, S J, Jo, Y D, Korea Maritime Univ; Bae, C W, Korea Inst of Maritime & Fisheries Tech; Moon, K M, Korea Maritime Univ, Korea  

Effects of Orientation Field on Magnetostrictive Properties of Unsaturated Polyester Resin-bonded Tb0.3Dy0.7Fe2 Composites  
Dong, X F, Dalian Univ of Tech; Guan, X C, Harbin Inst of Tech; Ou, J P, Qi, M, Wu, Y H, Jing, X Q, Dalian Univ of Tech, China  

Physical, Mechanical and Micro-structural Properties of Fly-Ash Based Geopolymeric Bricks Produced by Pressure Forming Process  
Kilinc, K, Anadolu Univ; Arioz, O, Cimsa Ready Mixed Concrete; Tunca, M, Tunca, A, Zeybek, O, Anadolu Univ; Kavas, T, Afyon Kocatepe Univ, Turkey  

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Characteristics of Unconfined Compressive Strength in Controlled Low Strength Materials Made with Coal Ash
Jung, H S, Chun, B S, Kong, J Y, Lim, J G, Hanyang Univ, Korea

Ductile-Fiber-Reinforced Cementitious Composite using Shirasu Fine Aggregate
Watanabe, K, Sat, F, Fujii, M, Arai, M I, Tokai Univ, Japan

Effect of Plate Thickness on the Width and Distribution of Cracks on Engineered Cementitious Composites (ECC)
Panganayi, C, Ogata, H, Hattori, K, Suto, M, Tottori Univ, Japan

Research on Fabricating Techniques of High Performance Ceramic Film and the Functionalized Application in Marine
Xue, Q, Zhuang, J, Zhang, J, Southwest Petroleum Univ, China

Structural and Phase Transformation Behaviour of Electroless Ni-W-Cr-P Alloy Coatings on Aluminum Alloy
Yong, J, Sichuan Univ; Xue, Q, Southwest Petroleum Univ, China

145. COASTAL XI: Beach Profile (V. 3)
Thursday  June 24  16:20  308, 3F
Chair: Li, YC, Dalian Univ of Technology, China

Improvement of Prediction Methods of Coastal Scour and Erosion due to Tsunami Back-flow
Yamamoto, Y, Tokai Univ; Ca, V T, Vietnam Inst of Meteorology, Vietnam; Charusrojthanadech, N, King Mongkut’s Inst of Tech Ladkrabang, Thailand

Study on Appearance/Disappearance Processes of a Tombolo at Chiringa-shima Island, Ibusuki, Japan
Asano, T, Nagayama, A, Kagoshima Univ; Yamaguchi, H, Nihon Joho Sangyo; Tanaka, R, Kagoshima Construction College; Nakamura, K, Kagoshima Univ, Japan

Coastal Erosion Influence caused by Global Warming on Korean Coast and Adaptive Management
Kim, K H, Widayati, A, Kwandong Univ; Shim, K T, Myungji Univ; Han, J M, Hangil, Korea

Numerical Model Simulation of Cross Scale Interaction between River Plume and Coastal Flows
Yang, W C, Lee, C H, Taiwan Ocean Research Inst; Chen, W B, National Taiwan Univ, Taiwan, China; Kuo, A Y, College of William and Mary, USA

Research on Wetlands Evolution of Pearl River Estuary
Chen, X W, Yan, Y X, Hohai Univ, China

Effect of Transport Rate Parameter to the Beach Slope Breakdown in the Process of Cross-shore Sediment Transport

A Quasi-3D Sediment Transport Modelling for Coastal Morphodynamics
Chiang, Y C, Tzu Chi Univ; Lin, M C, National Taiwan Univ; Hsiao, S S, National Taiwan Ocean Univ, Taiwan, China
Modelling Shore Parallel Breakwaters Effects on Coastal Morphological Change in Various Hydrodynamic Conditions
Du, Y L, China Inst of Water Resources & Hydropower Research, China; Pan, S, Univ of Plymouth, UK; Zhou, H D, China Inst of Water Resources & Hydropower Research, China

A Phase-resolving Beach Evolution Model Based on Fully Nonlinear Boussinesq Equations
Fang, K Z, Dalian Univ of Tech, China; Dong, P, Univ of Dundee, UK; Zou, Z L, Dalian Univ of Tech, China

Morphological Changes at Yangtze Estuary under Different Water Conditions
Zhou, X Y, Zanke, U, Yan, Y X, Inst for Hydraulic and Water Resources Engineering, Germany

The Study of Sand Beach Deformation Due to Construction of the Jetty
Park, S K, Han, C S, Lee, J S, Lee, K H, Pusan National Univ, Korea

146. PIPELINES & RISERS XI: Risers & Mooring (V. 2)
Thursday June 24 16:20 301AB, 3F
Chair: Knapp, RH, Univ of Hawaii, USA
Co-Chair: Gu, H, COOEC, China

Experimental Study of Flow Characteristics for Free-Standing Riser
Wang, P, Deng, D M, Li, X P, Peng, M, Chen, J J, Gong, J, China Univ of Petroleum, China

Material Estimation and Structural Analysis for Large Diameter Riser Pipe
Jung, D H, Kim, H J, Moon, D S, MOERI/KORDI, Korea

Riser Installation by Dynamic Positioning Vessel
Liang, J, Xia, B Y, Miao, C S, Lin, S Q, COOEC Shenzhen Subsea Technology, China

Modelling the Effect of Mooring Line Breakage Due to Wave Impact on a Floating Platform
Rudman, M, Cleary, P W, CSIRO, Australia

Mooring Analysis of Derrick/Lay Barge Lanjiang for Large Jacket Installation
Qin, L C, Li, H L, Wu, Z Q, Yu, W T, Xie, W W, He, M, COOEC, China

Cable Bend Testing over a Variable Diameter Sheave
Cutler, K C, US Coast Guard; Knapp, R H, Univ of Hawaii, USA

Fiber Bragg Grating Technology used in Testing Tensile Forces in Mooring Lines
Yang, Y C, Chen, C L, Liu, Q, Ocean Univ of China; Liu, D L, Shenzhen Univ, China

Preliminary Tests on the Terminal Velocity of a Torpedo Anchor in Still Water
Hasanloo, D, Wang, H K, Yu, G L, Shanghai Jiao Tong Univ, China

147. OFFSHORE SYSTEMS & DESIGN II (V. 1)
Choice of Optimal Constructive Solutions of Reinforced Concrete Gravity Based Substructures for the Platforms of Sakhalin Shelf
Bellendir, E N, Glagovsky, V B, Finagenov, O M, JSC B.E. Vedeneev VNIIG, Russia

The Application of Top of Column Connection Frame in the Design of Floating Structures
Zhang, D G, INTECSEA, USA; Deng, Z C, Yan, F S, Harbin Engineering Univ, China

Topside Load Transfer Process from a Transportation Barge to Catamaran Barges
Zhang, Z, FloaTEC; Kim, M H, Texas A&M Univ, USA

Structural Displacement Verification of Container Cranes by Moving Load Model
Rapp, C, Kreuzer, E, Hamburg Univ of Tech, Germany

The Assessment of Actual Bearing Capacity of Offshore Drilling and Workover Rig Derrick
Guan, F, Zhou, C X, Yangtze Univ; Duan, M L, China Univ of Petroleum; W, W X, Yangtze Univ, China

The Three-dimensional Numerical Simulation of the Supersonic Swirling Separator
Wen, C, Cao, X W, Zhang, J, Zhang, W J, Wu, L H, China Univ of Petroleum, China

Hydroelastic Interaction between the Composite Thin-Wall Structures and the Abutting Liquid
Taranukha, N A, Komsomolk-na-Amur State Tech Univ, Russia

Effect of Hydroelastic Response on the Structural Strength Assessment of a Large Container Ship
Miyake, R, Matsumoto, T, Yamamoto, N, Toyoda, K, Nippon Kaiji Kyokai, Japan

Hydroelastic Bending of a Barge
Mathai, T, The Glosten Associates, USA

A Study on Ship Speed Loss of Non Ballast Crude Oil Carrier in High Winds
Momoki, T, Onishi, S, Ikeda, Y, Osaka Prefecture Univ, Japan

Maneuvering Performance of a Catamaran with Asymmetric Demi-hull Form
Muhammad, A H, Hasanuddin Univ, Indonesia; Yasukawa, H, Hiroshima Univ, Japan

The Effect of the Side Hull Arrangement on the Maneuvering Characteristics of the Trimaran Ship
Fang, M C, Chang, Z H, Yang, S A, National Cheng Kung Univ, Taiwan, China

Effect of Tow Ship's Dimension on Turning Characteristic of Towing System
Fitriadhy, A, Yasukawa, H, Hiroshima Univ, Japan

The Effect of Aft Hull Form on Overshoot Angles in Zig-zag Manoeuvre
Yamaguchi, Y, Namura Shipbldg; Furukawa, Y, Kyushu Univ; Mutou, H, Namura Shipbldg, Japan

Experimental Study on Prediction Method for KVLCC1's Maneuverability
Shin, H K, Jung, J H, Univ of Ulsan, Korea

Numerical Study on Prediction Method for KVLCC1's Maneuverability
Shin, H K, Jung, J H, Univ of Ulsan, Korea

A Proposal of Zero-emission Ship Service Premising the GHG Storage into Aquifers under Ocean Floor
Yamane, K, Murakami, C, National Maritime Research Inst; Abe, Y, Kaneko, A, Univ of Tsukuba; Fuji, N, Inohara, Y, Aya, I, Taiko-Sangyo Co, Japan

149. UNDERWATER VII: AUV & UUV 2 (V. 2)
Thursday June 24 16:20 305, 3F
Chair: Yamaguchi, S, Kyushu Univ, Japan
Co-Chair: Chen, Y, Zhejiang Univ, China

Multi-layer Model Simulation and Data Assimilation in the Sarangoon Harbor of Singapore
Wei, J, Zheng, H, MIT, USA; Ooi, B H, Singapore-MIT Alliance for Research & Tech; Dao, M H, National Univ of Singapore, Singapore; Cho, W, Malanotte-Rizzoli, MIT, USA; Tkalich, P, National Univ of Singapore; Patrikalakis, N M, Singapore-MIT Alliance for Research, & Tech, Singapore/MIT, USA

Application of Multiple Autonomous Underwater Vehicles in Oceanographic Sampling
Jiang, D P, Pang, Y J, Qin, Z B, Harbin Engineering Univ, China

Role-Behavior Switching Based Cooperative Chemical Plume Tracing with Multiple AUVs
Kang, X D, Shenyang Inst of Automation, CAS, China; Li, W, California State Univ Bakersfield, USA; Xu, H L, Feng, X S, Shenyang Inst of Automation, CAS, China

Conceptual Design Optimization of Underwater Gliders Based upon Surrogate Models
Tao, G H, Yang, L, Hu, Z Q, Cheng, Y J, Shenyang Inst of Automation, CAS, China

Stability Analysis and Dynamics Balance for Underwater Vehicle Manipulator System
Chang, Z Y, Zhang, X C, Liu, Y, Ocean Univ of China, China
Research and Development of Multiple Heterogeneous UUVs Simulation System
Li, Y P, Shenyang Inst of Automation, CAS, China

Comparing of MPEKF/MPUKF in Semi-physical Simulation of UUV Bearings-only Tracking Systems
Xu, J B, Feng, X S, Shenyang Inst of Automation, CAS, China

Hybrid Range Determination and Adaptive Unscented Kalman Filter Method based Bearing-only Target Tracking Decision System for Unmanned Underwater Vehicles
Ren, S Z, Feng, X S, Shenyang Inst of Automation, China

UKF-based Parameter Estimation Method for Precise UUV Navigation
Lin, Z L, Feng, X S, Shenyang Inst of Automation, CAS, China

A CFD-Analysis-based Design Method for an Autonomous Underwater Vehicle Ducted Propeller
Joung, T H, Sammut, K, He, F P, Flinders Univ, Australia

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