

TECHNICAL PROGRAM

ISOPE-2019 Honolulu, Hawaii, USA The Twenty-ninth (2019) International Ocean and Polar Engineering Conference Honolulu, Hawaii, USA, June 16–21, 2019



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SUNDAY, June 16 Conference Reception

17:00

Great Lawn

MONDAY 08:30

1. Opening General Session:

OCEAN AND ARCTIC TECHNOLOGY: Challenges (V. 1)
Monday June 17 08:30 Coral 3, 6F1

Chair: Jin S Chung, Conference Chair, ISOPE, USA

Co-Chair: Xiaojian Jin, Offshore Oil Engineering Co., CNOOC, China

Driving Changes in Challenging Times [Oral Presentation]
Andrew R LaFountain, ExxonMobil Research and Engineering Co., USA

Enabling Technology Adoption in the Oil & Gas Industry from a Services Company Perspective [Oral presentation]
Geeta Thakorlal, INTECSEA, USA

MONDAY 10:30

2. HYDRODYNAMICS I: Wave Mechanics 1 (V. 3)
Monday June 17 10:30 Coral 1

Chair: Qingwei Ma, City, University of London, UK

A Continuum Poroelastic Model for Gravity Waves on an Ice-Covered Ocean
Hua Chen, Robert P. Gilbert, Philippe Guyenne, Univ of Delaware, USA

Experimental Model of Wave Reflection and Transmission by Double Floating Plate
Filippo Nelli, Univ of Melbourne; Alberto Alberello, Luke Bennetts, Univ of Adelaide; Alessandro Toffoli, Univ of Melbourne, Australia

Study on the Propagation Characteristics of Ship Waves in Restricted Waters

Weina Du, Lilan Zhou, Jiangtao Qin, Wuhan Univ of Technology, China

Ocean Currents Trigger Rogue Waves

Alessandro Toffoli, Univ of Melbourne, Australia; Guillaume Ducrozet, Ecole Centrale de Nantes, France; Takuji Waseda, Univ of Tokyo, Japan; Miguel Onorato, Univ of Turin, Italy; Maryam Abdolapour, Univ of Western Australia; Filippo Nelli, Univ of Melbourne, Australia

Spatial and Temporal Impulse Response Function of Propagating Wave

Munehiko Minoura, Naoki Hayatsu, Osaka Univ, Japan

3. DIGITAL, AI, Learning 1 (V. 1)

Monday June 17 10:30 Coral 2

Chair: Sungho Lee, Glostent, Inc., WA, USA

Machine Learning for Motion Prediction during Dry Transportation

Yan Zu, Francois-Xavier Sireta, DNV GL, Singapore; Xu Lu, Hao Sun, COSCO Shipping Co. Ltd, China

A Machine Learning Based Framework for Model Approximation Followed by Design Optimization for Expensive Numerical Simulation-based Optimization Problems

Endashaw Tesfaye Woldemariam, Hirpa G. Lemu, Univ of Stavanger, Norway

Model Reduction through Machine Learning Tools Using Simulation Data with High Variance

Kevin Koosup Yum, SINTEF Ocean, Norway; Bhushan Taskar, Technical Univ of Denmark, Denmark; Eilif Pedersen, NTNU, Norway

A LSTM Deep Learning Model for Deterministic Ship Motions Estimation Using Wave-Excitation Inputs

Shiliang Duan, Qingwei Ma, Limin Huang, Xuewen Ma, Harbin Engineering Univ, China

4. RENEWABLE ENERGY I: Wave Energy 1 (V. 1)

Monday June 17 10:30 Coral 4

Chair: Eric Friis-Madsen, Wave Dragon, Denmark

Co-chair: Yoon Hyeok Bae, Jeju National Univ, Korea

Experimental Study on a 3D Offshore-stationary Dual-chamber OWC Wave Energy Converter

Yu Zhou, Dezhi Ning, Rongquan Wang, Dalian Univ of Technology, China

Power Hardware-in-the-Loop Real Time Modelling Using Hydrodynamic Model of a Wave Energy Converter with Linear Generator Power Take Off

Tatiana Potapenko, Arvind Parwal, Uppsala Univ, Sweden; James F. Kelly, Univ College Cork, Ireland; Jennifer Leijon, Johannes Hjalmarsson, Sara Anttila, Cecilia Bostrom, Irina Temiz, Uppsala Univ, Sweden

Constrained Optimization of Parameters for LMMHD Wave Energy Conversion Device

Huabing Liu, Aiwu Peng, Lingzhi Zhao, Inst of Electrical Engineering, CAS, China

Fluid-Structure Interaction for Flapping Flexible Plate with Two Plates in a Line

Chao-ran Yang, Xing Zheng, Harbin Engineering Univ, China; Qing-Wei Ma, City, Univ of London, UK; Zi-Ying Yu, Harbin Engineering Univ, China

5. VORTEX-INDUCED VIBRATIONS I (V. 3)

Monday June 17 10:30 Coral 5

Chair: Frank Lim, 2H Offshore, UK

Numerical Simulation of Three Typical Vortex Dominant Flow Problems

Mengna Xu, Tingqiu Li, Zuyuan Liu, Jiangyan Shao, Wuhan Univ of Technology, China; William Geraint Price, Pandeli Temarel, Dominic Hudson, Univ of Southampton, UK

Characteristics of the Horseshoe Vortex at a Cylindrical Pile under a Current and Combined Waves and Current

Wen-Gang Qi, Kai Xu, Jun Liu, Fu-ping Gao, Inst of Mechanics, CAS, China

Coupling Viscous Vorticity Equation (VISVE) Method with OpenFOAM to Predict Turbulent Flow around 2-D Hydrofoils and Cylinders at High Reynolds Numbers

Hao Yao, Spyros A Kinnas, Univ of Texas at Austin, USA

6. HPM I: Advanced Materials (V. 4)

Monday June 17 10:30 S Pacific 1

Chair: HyunWoo Jin, ExxonMobil Research & Engineering, NJ, USA

Functional Nano Structuring Technology for Commercial Approaches [Oral Presentation]

Jae-Hong Park, Korea National NanoFab Center; Hae Su Yum, Ji-Hye Kim, NanoIn Inc; Jang Wook Choi, Sunhwa Lee, AJIN Industrial; Jae Hong Park, Korea National NanoFab Center, Korea

Bolt Tightening Qualification Procedure (BTQP) for Preloaded Bolted Connections Made of Stainless Steel

Dominik Jungbluth, Natalie Stranghöner, Nariman Afzali, Christoph Abraham, Univ of Duisburg-Essen, Germany

Correlation between Microstructure and Mechanical Properties of Steels for Offshore Platforms [Oral presentation]

Sangyong Shin, Hyunwook Lee, Gunhee Lee, Junggu Lee, Yongjai Kwon, Univ of Ulsan; Jongchul Kim, Sungkyu Cho, Hyundai Steel, Korea

Inexpensive Hot-embossed Superhydrophobic Surface

Haonan Xu, China Ship Development & Design Center, China

EBSD Characterization of the Microstructure Evolution in (σ , γ)-containing SDSS Subjected to Long Term Heating

Mona Haukali, Ida Westermann, NTNU; Morten Karlsen, Equinor ASA; Jarle Hjelen, NTNU, Norway

Effects of Elevated Temperature on Mechanical Properties of the High Strength Al-Zn-Mg-Cu Alloy [Oral presentation]

Hyokyung Sung, Woojin An, Kwangho Lee, Sangshik Kim, Jehyun Lee, Gyeongsang National Univ, Korea

Composite Coatings Formed on PEO-layers Using Fluoroparaffin Materials

Sergey V Gnedenkov, Dmitry V Mashtalyar, Sergey L Sinebryukhov, Igor M Imshinetskiy, Andrey S Gnedenkov, Inst of Chemistry, FEB RAS, Russia

High-strength Nanoporous Cu Fabricated by Dealloying [Oral presentation]

Sung Soo Park, Si-Young Lee, Ulsan National Inst of Science and Technology, Korea

Role of Ca Microalloying in Improving the Mechanical Properties of Mg-Zn-based Alloy [Oral presentation]

Sung Soo Park, Beomcheol Kim, Ulsan National Inst of Science and Technology, Korea

A New Microstructure Design for High Performance Structure Metallic Materials

Kei Ameyama, Mie Kawabata, Bhupendra Sharma, Ritsumeikan Univ, Japan

7. ENVIRONMENT I: Oil Spill, Emission (V. 1)

Monday June 17 10:30 S Pacific 2

Chair: Charles Bostater, Florida Inst of Tech, USA

Safety Indicators of Critical Infrastructure Application to Port Oil Terminal Examination

Krzysztof Kolowrocki, Joanna Soszynska-Budny, Gdynia Maritime Univ, Poland

Effect of the Separation Channel Structure on Separation Performance of Oil-Seawater Mixed Flow Electromagnetic Separation Device

Xiaoqiang Chen, Lingzhi Zhao, Ciwen Sha, Aiwu Peng, Inst of Electrical Eng, CAS, China

A Numerical Study of the Drilling Fluid's Discharge in South China Sea

Zhigang Li, Meirong Jiang, CNOOC Research Inst, China

Near Field Simulation of Wastewater Discharged into Wave and Tidal Current Environment

Shuqiao Fang, Yongping Chen, Zhenshan Xu, Hongwei Ding, Yuhang Chen, Hohai Univ, China

Numerical Simulation of Water Exchange Ability in Xiyang Channel on the Radial Sand Ridges of South Yellow Sea [Proceedings only]

Zhipeng Zhou, Jianfeng Tao, Kehua Wang, Jun Zhang, CCCC-FHDI Engineering, China

UAV-based Detection and Spatial Analyses of Tidal Creek

Weiqi Dai, Huan Li, Xiaoyan Zhang, Zhiyuan Li, Changkuan Zhang, Hohai Univ; Xuefeng Pan, Nanjing Univ, China

Analysis of Abnormal Wave Dynamics in Irregular Sea State

Huidong Zhang, Yongmou Zhang, Yu Xu, Xujie Wang, Hongda Shi, Ocean Univ of China, China

8. OCEAN TECHNOLOGY I: Installation 1 (V. 1)

Monday June 17 10:30 S Pacific 3

Chair: Hong-Gun Sung, Korea Research Inst of Ships & Ocean Eng, Korea

Co-Chair: Pasquale G F Filianoti, Univ Mediterranea of Reggio Calabria; Italy

Fatigue Analysis of Seafastening Structure Considering Coupled Behavior of DTV and Topside and Study on Average Sea-state Method for Fast Estimation of Fatigue Damage

Hyun-Sung Kim, Byoung Wan Kim, Kangsu Lee, Hong Gun Sung, Korea Research Inst of Ships & Ocean Eng, Korea

An Experimental Study on the Float-over Installation of a Semi-submersible

N.W. Kim, B.W. Nam, Y.J. Kwon, I.B. Park, S.K. Cho, H.G. Sung, Korea Research Inst of Ships & Ocean Eng, Korea

Design of Elastomeric Pad in LMU for Semi-submersible Float-over Installation

Hyun-Seok Kim, Kangsu Lee, Byoungjae Park, Hong-Gun Sung, Korea Research Inst of Ships & Ocean Eng, Korea

Study on the Mooring Simulator for Floating Multibody System

Namkug Ku, Jeahwa Kim, Dong-Eui Univ, Korea

Comparative Study of Dynamic Analysis and Model Test for Installation of Flare Tower considering Ocean Environments

Jun-Hyeok Bae, Ju-Hwan Cha, Sol Ha, Mokpo National Univ; Bo-Woo Nam, Hong-Gun Sung, Korea Research Inst of Ships & Ocean Eng, Korea

Numerical Simulation and Experimental Verification of Rock-breaking Mechanism of Angled Water Jet

Xiaobao Liu, Deyong Zou, Long Pan, China Univ of Petroleum (Huadong); Fangxiang Wang, CNPC Bohai Drilling Eng, China

Cost Effective Subsea Rock Removal Tool for Deepwater Applications

Ingvar Bjelland, Trond Bradland, Scanmudring AS; Jens-Olav Rundsag, Arne Ingvar Helland, Equinor ASA; Jarle Rygg, DeepOcean AS, Norway

9. ADVANCED SHIP TECH I: EEDI, Added Resistance (V. 4)

Monday June 17 10:30 S Pacific 4

Chair: Jin Kim, Korea Research Inst of Ships & Ocean Eng, Korea

Ship Intelligent Energy Efficiency Management System Design

Zuxian Tan, Shunhuai Chen, Hui Lin, Yuhong Zeng, Liang Luo, Wuhan Univ of Technology, China

Comparative Study on Added Resistance of a Container Ship in Waves

Dong-Min Park, Jae-Hoon Lee, Jaehoon Lee, Beom-Soo Kim, Byung-Soo Kim, Kyung-Kyu Yang, Yonghwan Kim, Seoul National Univ; Young-Gill Lee, Inha Univ; Taeyoung Kim, Samsung Heavy Industries; Jin-Ho Yang, Hyundai Heavy Industries; Kang-Hyun Song, Korean Register of Shipping; Seung-Gyu Jeong, Lloyd's Register Asia; Hyung-Min Do, ABS Global Eng, Korea; Frederik Gerhardt, SSPA Sweden AB, Sweden

Investigation of Wave Added Resistance for Minimum Propulsion Power of an Aframax-Class Tanker with Numerical Simulations and Model Tests

Doo-Jin Jung, Jin-Woo Choi, Young-Bum Lee, Cheul-Hyun Kim, Sei-hwan Kim, Daewoo Shipbuilding & Marine Eng; Jae-Kyung Heo, DNV GL, Korea

Prediction of Power Increase and Propulsive Performances in Regular Head Short Waves of KVLCC2 Using CFD

Cheol-Min Lee, Jin-Hyeok Seo, Jin-Won Yu, Jung-Eun Choi, Inwon Lee, Pusan National Univ, Korea

Construction and Baseline Fitting of EEDI-LCA Ship Energy Efficiency Model

Shuqiao Wan, Wei Cai, Menglei Mei, Wuhan Univ of Technology, China

10. GEOTECH I: Spudcan (V. 2)

Monday June 17 10:30 Sea Pearl 2-4

Chair: Chun Fai Leung, National Univ of Singapore, Singapore

Co-chair: Pan Hu, Univ of Western Australia; Australia

Evaluating the Penetration Resistance of Spudcan Foundations in Clay Overlying Sand

Yifa Wang, Univ of Western Australia; Mark J Cassidy, Univ of Melbourne; Britta Bienen, Univ of Western Australia, Australia

Bearing Capacity Envelopes for a Spudcan During Operation in Sand-over-Clay

Pan Hu, Univ of Western Australia; Mark Cassidy, Univ of Melbourne, Australia

Model Study for Spudcan-pile Interaction in Uniform Clay and Sand-Over-Clay

Sen Sven D Falcon, Shemelyn Sespene, Yun Wook Choo, Kongju National Univ, Korea; Chun Fai Leung, National Univ of Singapore, Singapore

Three-legged Jack-up unit Scale Model Experiment Study of Spudcan Reinstallation Close to Footprint

Ye Yuan, Fudan Univ; Yi Zhang, Chinese Academy of Geological Sciences; Chengliang Zhang, Lindong Fan, Menglan Duan, China Univ of Petroleum-Beijing, China

Bearing Capacity Analysis of a Strip Footing on Sand Overlying Soft Clay Using Adaptive Discontinuity Layout Optimisation

Mason Crumpton, Scott W. Sloan, Univ of Newcastle, Australia

Study of Spudcan Punch-Through in Multilayered Clay Via Centrifuge Tests

Sa Li, Lan Lin, Tianjin Univ, China

11. UNDERWATER I: Sensing & Navigation 1 (V. 1)

Monday June 17 10:30 Nautilus Ste

Chair: Shojiro Ishibashi, JAMSTEC, Japan

Development of Underwater 8K Super Hi-Vision Camera of ROV Mounted Type

Kiyotaka Tanaka, Shojiro Ishibashi, Kenkichi Tanioka, Hidehiko Nakajoh, Makoto Sugawara, JAMSTEC; Seiji Mitsuhashi, Daiki Furusawa, Managu Hirose, Japan Broadcasting, Japan

Multi-targets Real Time Detection from Underwater Vehicle Vision via Deep Learning CNN Methods

Fenglei Han, Haitao Zhu, Jingzheng Yao, Harbin Engineering Univ, China

Underwater Image Processing and Object Detection Based on Modified YOLO Method

Jingzheng Yao, Fenglei Han, Haitao Zhu, Harbin Engineering Univ, China

Absolute Scale Structure-from-Motion on Underwater Images with a Monocular Camera

Renxia Wu, Ocean Univ of China; Liya Duan, Shandong Academy of Sciences; Hui Fang, Ocean Univ of China, China

System for Real-time Positioning and Monitoring of Fish in Commercial Marine Farms Based on Acoustic Telemetry and Internet of Fish (IoF)

Waseem Hassan, Martin Fore, NTNU; Henning Andre Urke, INAQ AS; Torstein Kristensen, John Birger Ulvund, Nord Univ; Jo Arve Alfredsen, NTNU, Norway

MONDAY 13:10

Plenary Presentation

Monday 13:10 Coral 1, 6F

Recent Development of Wave Modelling [Plenary]

Philip L-F Liu, National Univ of Singapore, Singapore

Keynote Presentation

Monday 13:10 S Pacific 1, 6F

Hydrogen Embrittlement: From Experiments and Modeling to Prognosis [Oral presentation]

Petros Sofronis, Zahra S Hosseini, Mohsen Dadfarnia, Masanobu Kubota, Akihide Nagao, Brian P Somerday, Robert O Ritchie, Univ of Illinois at Urbana-Champaign, USA

Keynote Presentation

Monday 13:10 Nautilus Ste, 6F

Russian Arctic Ice Cover: Review

Yuri P Gudoshnikov, Arctic and Antarctic Research Inst, Russia

12. HYDRODYNAMICS II: Wave Mechanics 2 (V. 3)

Monday June 17 14:00 Coral 1

Chair: Philippe Guyenne, Univ of Delaware, USA

Review of Experimental Modeling of Green Water in Laboratories

Wei-Liang Chuang, Kuang-An Chang, Richard Mercier, Texas A&M Univ, USA

Spatial Modeling of Sea States with Applications in Risk and Fatigue Analysis Using Systems of Stochastic Partial Differential Equations [Oral presentation]

Anders Hildeman, David Bolin, and Igor Rychlik, Chalmers Univ of Tech, Sweden

Virtual Source Method Simulation of Progressive Water Waves

Omar Al-Tameemi, David I. Graham, Univ of Plymouth; Kurt Langfeld, Univ of Liverpool, UK

A Numerical Study on Freak Waves Generated from Wave Groups in Random Sea

Ruili Fu, Yuxiang Ma, Guohai Dong, Kezhao Fang, Dalian Univ of Technology, China

Numerical Investigations of the Resonant Interactions between Two Oblique Gravity Wave Trains

Jianjian Xie, Yuxiang Ma, Guohai Dong, Congfang Ai, Dalian Univ of Technology, China

13. DIGITAL, IT, AI, Learning II (V. 1)

Monday June 17 14:00 Coral 2

Chair: Francois-Xavier Sireta, DNV GL, Singapore

Co-chair: SungHo Lee, Glosten, Inc., WA, USA

A Ship Main Engine Power Predictive Model Based on Big Data Analytics and Machine Learning

Yanfei Zhang, Yiyan Wen, ZhenPing Huang, Shanghai Ship and Shipping Research Inst, China

A Transfer Learning Strategy for Modeling Pressure Coefficient around Cylinder in Non-Uniform Flow Using Convolutional Neural Network

Shuran Ye, Yiwei Wang, Zhen Zhang, Chenguang Huang, Inst of Mechanics, CAS, China

Experimental Research on Marine Digital Navigation System

Xiang Wang, Jingxian Liu, Zhao Liu, Wuhan Univ of Technology, China

Research on the Speed Optimization Model Based on BP Neural Network and Genetic Algorithm (GA)

Hui Lin, ShunHuai Chen, Liang Luo, Ziming Wang, Yuhong Zeng, Wuhan Univ of Technology, China

14. RENEWABLE ENERGY II: Wave Energy 2 (V. 1)

Monday June 17 14:00 Coral 4

Chair: Yuxiang Ma, Dalian Univ of Technology, Dalian, China

Parameterisation of Radiation Forces for a Multiple Degree of Freedom Wave Energy Converter Using Moment-Matching

Nicolas Faedo, Yeraí Peña-Sánchez, John V Ringwood, Maynooth Univ, Ireland

A Critical Comparison Between Parametric Approximation Methods for Radiation Forces in Wave Energy Systems

Yerai Peña-Sanchez, Nicolas Faedo, John V Ringwood, Maynooth Univ, Ireland

Numerical and Experimental Study for Nonlinear Dynamic Behavior of an Asymmetric Wave Energy Converter

Haeng Sik Ko, Dongeun Kim, Il-Hyoung Cho, Yoon Hyeok Bae, Jeju National Univ, Korea

Performance Evaluation and Optimization of a Hinged-typed Wave Energy Converter

Wei Meng, Meng Chen, Heather Peng, Wei Qiu, Memorial Univ of Newfoundland, Canada

Performance Assessment of Pitch-type WEC Rotor Based on Time Domain Simulations

Sunny Kumar Poguluri, Il-Hyoung Cho, Yoon Hyeok Bae, Jeju National Univ, Korea

15. VORTEX-INDUCED VIBRATIONS II (V. 3)

Monday June 17 14:00 Coral 5

Chair: Michael S. Triantafyllou, M.I.T., MA, USA

Co-Chair: Rodolfo T. Gonçalves, Univ of Tokyo, Japan

Cross-flow Vibration Response for One-Fixed-One-Free Tandem Arrangement Cylinders with Large Mass Ratio Using Wind Tunnel Experiment

Zhongming Hu, Jiasong Wang, Ren Sun, Shanghai Jiao Tong Univ; Jianliang Zhou, Liangbin Xu, Leixiang Sheng, CNOOC Research Center, China

Numerical Simulations of Vortex-induced Vibrations of Flexible Risers in Tandem Arrangement

Lei Wu, Di Deng, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China

Experimental Study on Flow-induced Vibration of Floating Square Cylinders with Twisted Surfaces

Rodolfo T Gonçalves, Univ of Tokyo, Japan; Leandro Souza Pinheiro da Silva, University of São Paulo, Brazil; Dennis Maluf Gambarine, Mampae Offshore Industries, The Netherlands; Shinichiro Hirabayashi, Univ of Tokyo, Japan; Gustavo Roque da Silva Assi, Univ of São Paulo, Brazil; Hideyuki Suzuki, Univ of Tokyo, Japan

Calculation of Hydrodynamic Force Acting on the Forced Oscillating Plate by Vortex Method

Yutaka Okamoto, Hitachi Zosen; Shuichi Nagata, Yasutaka Imai, Saga Univ; Hideyuki Niizato, Hitachi Zosen, Japan

Experiment and Numerical Simulation of Vortex Induced Vibration on Buoyancy Module Area of Steel Lazy Wave Riser

Mitsushi Watanabe, National Maritime Research Inst; Kaito Chibana, Japan Marine United; Shunji Kato, Kazuhiro Yukawa, National Maritime Research Inst, Japan

Effect of the Curved Shape on the Vortex-induced Vibration of a Riser

J.H. Jung, S.H. Oh, B.W. Nam, D.H. Jung, B.W. Park, Y.J. Kwon, Korea Research Inst of Ships & Ocean Eng, Korea

16. HPM II: Low-Temperature, Cryogenic Materials (V. 4)

Monday June 17 14:00 S Pacific 1

Chair: Nobuyuki Ishikawa, JFE Steel Corporation, Kawasaki-ku, Japan

Co-Chair: Abe Nezamian, Aurecon Group, Australia

Mechanical Property Characterization of Weld Consumables for Arctic Service

Tom McGaughy, EWI, USA

Weldability Evaluation of a New High Strength 9% Ni Steel for Cryogenic Applications

Wenkao Hou, George J Fraley, ArcelorMittal Global R&D; Ronald Gollihue, Special Metals Corp; Fred B Fletcher, Murali Manohar, ArcelorMittal Global R&D, USA

How to Estimate Performances of Cryogenic Spillage Protection Materials?

Sebastien Viale, TechnipFMC, France

Effects of Phosphorus for Cryogenic-Temperature Charpy Impact Toughness of 9% Nickel Steel [Oral presentation]

Ki Jung Park, Dae Hyun Cho, Sanghyup Lee, Hyundai Steel; Cheol-Woong Yang, Sungkyunkwan Univ, Korea

The Evaluation of High Mn Steel for Slurry Pipe [Oral presentation]

S C Lee, I W Han, D H Lee, S G Lee, J K Choi, POSCO, Korea; H W Jin, N Ma, ExxonMobil Research & Engineering; A. Wasson, V Neerav, ExxonMobil Upstream Research; D Fairchild, ExxonMobil Production, USA

Welding of High Manganese Austenitic Steel to the LNG Storage Tank [Oral presentation]

Il Wook Han, Bong-guen Lee, Jong-gyo Choi, POSCO, Korea

Deformation Behavior of Hydrogen-charged Bi-crystal Micropillars of High Manganese Steel [Oral presentation]

Dachwan Kim, Chong Soo Lee, Pohang Univ of Science and Technology, Korea

Application of High Manganese Austenitic Steel to the LNG Fuel Tank for 50,000 DWT Eco-Friendly Bulk Carrier [Oral presentation]

Dowon Seo, Juntae Lee, Geon Shin, POSCO; Nuri On, Korea Maritime & Ocean Univ; Kangki Lee, POSCO, Korea

Continue at Session 26

17. ENVIRONMENT II: EcoSystem, Water Quality (V.1)

Monday June 17 14:00 S Pacific 2

Chair: Francesco Lalli, ISPRA, Italy

Remotely Sensed Water Reflectance Measurements Based on Unmanned Aerial Vehicle (UAV)

Xiaoyan Zhang, Huan Li, Marie Noelle Stephanie Cybele, Weiqi Dai, Zhiyuan Li, Hohai Univ, China

Verification and Improvement of Water Quality in Kumamoto, Japan

Zahura Chowdhury, Kazumi Terada, Hideki Kinoshita, Tokai Univ, Japan

Wave Effect on Tandem Buoyant Jets in the Marine Environment

Ebenezer Otoo, Yongping Chen, Zhenshan Xu, Hohai Univ, China

Interaction Between Dual Jets in the Marine Environment

Yuling Zhang, Yuhang Chen, Zhenshan Xu, Yongping Chen, Hohai Univ, China

Modelling of Accidental Water Pollution Incidents at Chengtong Reach of Yangtze River

Hongwei Ding, Zhenshan Xu, Yongping Chen, Hohai Univ, China

Integrated Ocean Resources Utilization Contributing to Climate Change Mitigation: A Case Study in East China Sea

Fengjun Duan, Canon Inst for Global Studies, Japan

18. OCEAN TECHNOLOGY II: Installation 2 (V. 1)

Monday June 17 14:00 S Pacific 3

Chair: Alan M Wang, China Offshore Oil Eng. Co, China

Co-Chair: Myung-Il Roh, Seoul National Univ, Korea

Response Forecasts for a Suspended Wellbay Module and Flare Tower during Transit to Shore

Hoi-Sang Chan, Evren Armaoglu, Matthew Thomson, Alistair Garner, Saipem Ltd., UK; Andrea Parisotto, Stefano Sovilla, Saipem, Italy

Stability Study on a Lifting Jack-up Platform by Moses Software

Zhi-jiang Lin, Bao-yu Zhang, Yuan-bo Zhang, De-jian Fu, Shi-lun Feng, Li-qiang Sun, Tianjin Univ, China

The Study on Finite Element Strength Analysis for FPSO Accommodation Lifting

Yan Wen, Gang Chen, Yuhang Wang, Danlei Zhao, Zhaohua Lian, Zhenhua Sun, Shanghai Waigaoqiao Shipbuilding, China

Study on the Synchronous Tandem Slewing Operation of a SSCV

Lixin Xu, Jinguang Wang, Indra Datta, Joe Zhou, Kai Huang, China Merchants Offshore Technology Research Center, China; Qi Hu, OOS International B.V., Netherlands

Analysis and Study of Weather Window for Marine Operations in South China Sea

Botao Xie, CNOOC Research Inst, China

Time-Domain Simulation of Rapid Load Transfer of Floatover Installation with Hydraulic Jacks by a T-Shaped Barge

Huailiang Li, Wentai Yu, Alan M. Wang, Offshore Oil Engineering; Andy Wang, Yongguang Cai, Wei Liu, Bichun Zhu, DNV GL Oil & Gas China, China

19. ADVANCED SHIP TECH II: Resistance (V. 4)

Monday June 17 14:00 S Pacific 4

Chair: Jin Kim, Korea Research Inst of Ships & Ocean Eng, Korea

Experimental Investigation of the Motion of a Fully Skirted Air Cushion Vehicle in Waves

Ning Liu, Fengxuan Zhuo, Xueqian Zhou, Harbin Engineering Univ; Jitting Qiu, Marine Design and Research Inst of China; Chenfeng Li, Huilong Ren, Harbin Engineering Univ, China

Research on the Resistance Characteristics of a Side Wing Ship in Straight Forward Motion

Lixun Hou, Dalian Maritime Univ; Shengren Wei, Dalian Shipbuilding Industry Eng & Res Inst; Ankang Hu, Xin Zhang, Dalian Maritime Univ, China

Experimental Research on Shallow Water Resistance of a Patrol Craft

Hao Wang, Shunhuai Chen, Wuhan Univ of Technology; Yucheng Wang, China Ship Development and Design Center, China

Numerical Calculation of Planing Boat Resistance Based on Remesh Method

Qi-nan Li, Jiang-tao Qin, Li-lan Zhou, Ke-qiang Chen, Wuhan Univ of Technology, China

Research on Scale Effect of Ship Appendage Resistance Based on CFD

Le Fang, Jiangtao Qin, Lilan Zhou, Ke-qiang Chen, Wuhan Univ of Technology, China

Verification and Validation for the Resistance of a KRISO Container Ship in Calm Water

Anzheng Yu, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China

Wigley Hull Form Optimization with or without Bulbous

Xinwang Liu, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China;
Changhong Hu, Kyushu Univ, Japan

**Study on Resistance of Multi-Function Small Surface Boat Design
[Proceedings only]**

Chun-Cheng Lin, Sheng-Ju Wu, Yu-chi Hsiao, CCIT, National Defense
Univ, Taiwan, China

20. GEOTECH II: Pile Foundation (V. 2)

Monday June 17 14:00 Sea Pearl 2-4

Chair Yun Wook Choo, Kongju National Univ, Korea

Co-chair Y K Chow, National Univ of Singapore, Singapore

**Evaluation of Un- and Reloading Stiffness and Damping of Monopile
Foundations in Non-Cohesive Soils**

Jann-Eike Saathoff, Klaus Thieken, Martin Achmus, Leibniz Univ
Hannover, Germany

**Ultimate Strength of Steel Pile in Liquefied Soil Subjected to Multiple
Earthquakes**

Moeko Matoba, Yoshihiro Kimura, Tohoku Univ, Japan

Finite Element Modelling of p-y curves for Monopiles in Liquefied Soil

Aske T Mikkelsen, COWI; Søren Dam Nielsen, Aalborg Univ; Martin U
Østergaard, COWI, Denmark

**Centrifuge Tests on Bearing Behavior of Guardrail Supporting Piles
Subjected to Horizontal Impact and Static Loads**

Jong Seok Yun, Min Jy Lee, Yun Wook Choo, Kongju National Univ,
Korea

**Numerical Analysis of Lateral Behaviour of Large-diameter Monopile in
Saturated Clay**

Haiyang Zhang, Run Liu, Yu Yuan, Chao Liang, Tianjin Univ, China

**Wave-induced Seabed Response around Mono-pile with Nonlinear Pile-
Soil Interaction**

Dagui Tong, Chencong Liao, Jinjian Chen, Shanghai Jiao Tong Univ, China

21. UNDERWATER II: Sensing & Navigation 2 (V. 1)

Monday June 17 14:00 Nautilus Ste

Chair: Shuo Wang, Institute of Automation, CAS, China

**The Magnetic Array Study of Effective Detection and Location for
Submarine Pipeline**

Mianjin Wang, Xiaofeng Liang, Hongdong Wang, Hong Yi, Shanghai Jiao
Tong Univ, China

RLS-ANF Phase Shift Estimator of Underwater Positioning System

Xianjun Ding, Min Yu, Wuhan Univ of Technology, China

**Three-Dimensional Path Planning for an Under-actuated Autonomous
Underwater Vehicle**

Ben Li, Huazhong Univ of Sci & Tech; Rui Zhao, China Shipbuilding
Industry Corp; Guohua Xu, Huazhong Univ of Sci & Tech; Guanxue Wang,
Zhen Su, Zhongxiang Chen, Huazhong Univ of Sci & Tech, China

**Research on AUV Space-Time Dynamic Path Planning Based on Spatial
Stratification [Proceedings only]**

Yunlei Zhang, Yanmin Xu, Chunming Zou, Hongxu Guan, Wuhan Univ of
Technology; Junchao Zhao, Yangtze Pilotage Center, China

MONDAY 16:20

22. HYDRODYNAMICS III: MetOcean 1 (V. 3)

Monday June 17 16:20 Coral 1

Chair: Munehiko Minoura, Osaka Univ, Japan

Extreme Sea State Measurements by Stereo Video System

Pedro Veras Guimarães, Fabien Leckler, SHOM; Jean-François Filipot, Rui Duarte, Sandra Deeb, France Energies Marines, France; Alvise Benetazzo, Filippo Bergamasco, ISMAR, Italy; Jochen Horstmann, Ruben Carrasco, Helmholtz-Zentrum Geesthacht, Germany

Identifying Breaking Waves from Measured Time Traces

Constantin Cosmin Craciunescu, Marios Christou, Imperial College London, UK

Intercomparison of Wind and Wave Reanalysis Based on ERA5 and WAVEWATCH III Databases

Christos Stefanakos, SINTEF Ocean, Norway

Evaluation of Wave Hindcast Models Skill in the Black Sea

Alessandra Saponieri, Politecnico di Bari; Giovanni Besio, Univ of Genoa; Francesca Simonetti, Politecnico di Bari, Italy; Vlad Radulescu, GeoEcoMar, Romania; Nico Valentini, Univ de Montpellier, France; Leonardo Damiani, Politecnico di Bari; Paolo Veltri, Univ della Calabria, Italy

A Comparison of Grid Models in WAVEWATCH III for a Typical Reef Lagoon of South China Sea

Ze Sun, Xiaolong Liu, Zhiwen Cai, China Ship Scientific Research Center, China; Jian-Guo Li, Met Office, UK; Wenwei Chen, Jun Ding, Chao Tian, China Ship Scientific Research Center, China

Response of Wave Characteristics to Binary Typhoons in South China Sea

Zelin Cheng, Fumin Xu, Chi Zhang, Hohai Univ, China; William Perrie, Bedford Inst of Oceanography, Canada

23. SLOSHING I: Physics & Prediction (V. 3)

Monday June 17 16:20 Coral 2

Chair: André Baeten, Augsburg Univ of Applied Sciences, Germany

Co-Chair: Yonghwan Kim, Seoul National Univ, Korea

Prediction of Sloshing Severity for Membrane LNG Cargo

Jieung Kim, Yonghwan Kim, Seoul National Univ; Sang-Yeob Kim, Korean Register, Korea

Data Mining for Impulse Pressures of Sloshing Model Test

Yangjun Ahn, Jieung Kim, Jeoungkyu Lee, Yonghwan Kim, Seoul National Univ, Korea

Dynamic Response of Sloshing Pressure Sensors

Sebastian Schreier, Wouter Cornel, Christian Poelma, Delft Univ of Technology, Netherlands

Study on Characteristics of Dynamic Evaporation of LNG Tank Containers during Seawater Transportation

Qianjin Yue, Peng Yu, Yuanchao Yin, Gang Wang, Dalian Univ of Technology, China

Numerical Simulation of a Flip-through During Shallow Water Sloshing Using SPH Method

Chaitanya C Kesanapalli, Heon Y Kang, Texas A&M Univ, USA

Numerical Coupling Model Based on SPH and Panel Method to Solve the Sloshing Effect on Ship Motion in Wave Condition

Chong Ma, Masayoshi Oka, National Maritime Research Inst, Japan

The Effect of Compressibility and Surface Waves on the Hydrodynamic Pressures for Flood Gates in Various Sluice Geometries

O.C. Tieleman, A. Tsouvalas, B Hofland, Delft Univ of Technology, Netherlands

24. RENEWABLE ENERGY III: Wave Energy 3 (V. 1)

Monday June 17 16:20 Coral 4

Chair: Pasquale G F Filianoti, Univ Mediterranea of Reggio Calabria; Italy

Failure Analysis on Darrieus Type Cross-flow Water Turbines Under Environment Load on Sea

Yongqi Zhao, Pipe Material & Equipment Corporation of CNPC; Yu Cao, Shiming Wang, Ling Ge, Shanghai Ocean Univ; Ziyang Liu, Ship Design and Research Inst, China

Dynamic Response of Three Combined Offshore Wind and Wave Energy Conversion Concepts Applied in Varied Water Depth

Ling Wan, Newcastle Univ, Singapore; Nianxin Ren, Dalian Univ of Technology, China; Zhiyong Tay, Singapore Inst of Technology, Singapore

Environmental Effects from Wave Power – Practical Insight from Two Wave Power Sites [Oral presentation]

Anke Bender, Uppsala Univ, Sweden

Float Resonance Characteristics for Wave Energy Converter in Heave Motion

Hanbin Gu, Bingtao Yin, Wei Xie, Yongqi Qiu, Xiwu Gong, Zhaode Zhang, Zhejiang Ocean Univ, China

25. VORTEX-INDUCED VIBRATIONS III (V. 3)

Monday June 17 16:20 Coral 5

Chair: Rodolfo T. Gonçalves, Univ of Tokyo, Japan

Direct Prediction Method of Streamwise Flow-induced Vibration Based on Modal Force Balance

Haojie Ren, Yuwang Xu, Mengmeng Zhang, Shanghai Jiao Tong Univ, China; Ziqi Lu, Univ of California-Berkeley, USA; Shixiao Fu, Shanghai Jiao Tong Univ, China

Visualization of Separation Control over a Hemisphere

Yong-Duck Kang, Dong-Eui Univ; Nam-Hyun An, Kojje College; Bonguk Koo, Changwon National Univ; Korea

Coupled CFD Analysis of Mooring Damping Effects on Vortex-Induced Motions of a Deep Draft Semisubmersible

Han Huang, Hamn-Ching Chen, Texas A&M Univ, USA

Tri-Helically Grooved Buoyancy Hydrodynamics Considering Surface Roughness using 3-D CFD

Lawrence Shien Hui Lai, Trelleborg Offshore, USA

26. HPM III: Corrosion Monitoring, Mitigation (V. 4)

Monday June 17 16:20 S Pacific 1

Chair: Eric J Wright, formerly ExxonMobil Production Co., TX, USA

Co-Chair: Ali Reza, Exponent, Los Angeles, CA, USA

Reinforcement Corrosion Monitoring of Reinforced Concrete Structures Using Piezoceramic-Based Wave Method

Shi Yan, Yuanyuan Yao, Yaoyao Chen, Xuenan Wang, Shenyang Jianzhu Univ, China

Measurement Errors of ILLI-reported Lengths of Corrosion Defects and Their Implications for System Reliability of Corroded Pipelines
Wenxing Zhou, Tammeen Siraj, Univ of Western Ontario, Canada

Exposure Test Results of the Corrosion Resistant Steel for Upper Deck Plate of Crude Oil Tanker
Yusuke Miura, Shinji Sakashita, Haruya Kawano, Manabu Izumi, Kobe Steel, Japan

Lightweight Steels with Enhanced Corrosion Property [Oral Presentation]
Chang-Hoon Lee, Kyeong-Won Kim, Sung-Dae Kim, Heon-Young Ha, Jae Hoon Jang, Joonoh Moon, Seong-Jun Park, Tae-Ho Lee, Korea Inst of Materials Science; Young-Joo Lee, RIST, Korea

Corrosion Protection of the Magnesium Obtained via Direct Laser Deposition for the Offshore Construction
Valentin I Sergienko, Presidium of RAS; Andrey S Gnedenkov, Dmitry Mashtalyar, Vladimir S Egorkin, Inst of Chemistry FEB RAS, Russia

Lightweight Mg Alloys with Highly Improved Corrosion Resistance [Oral presentation]
Sung Soo Park, Soo-Min Baek, Ulsan National Inst of Science and Technology, Korea

Fracture Characteristics of Cryogenic Steel Weld Joints [Oral presentation]
Gyubaek An, Jeongung Park, Chosun Univ; Jiwook Han, POSCO, Korea

27. COASTAL I: Wave Mechanics (V. 3)

Monday June 17 16:20 S Pacific 2

Chair: Sooyoul Kim, Tottori Univ, Japan
Co-Chair: Yuxiang Ma, Dalian Univ of Technology, China

Waves Enter a Reef Lagoon with Double Barriers in South China Sea: In-situ Measurement and Simulation
Zhiwen Cai, Wenwei Chen, Xiaolong Liu, Ze Sun, Chao Tian, Qiuqin Yun, China Ship Scientific Research Center, China

Investigation on Wave Attenuation Due to Bottom Friction of Sea Bed Using On-Site Measurement
Xiaolong Liu, Wenwei Chen, Zhiwen Cai, Ze Sun, Chao Tian, Qiuqin Yun, China Ship Scientific Research Center, China

Numerical Study on the Characteristics of Mixed Waves in the Indian Ocean during the Southwest Monsoon Season
Xuezhi Huang, Xiaozhou Ma, Yuxiang Ma, Guohai Dong, Dalian Univ of Technology, China

The Deterministic Reconstruction of Multi-directional Irregular Waves
Li Luo, Shuxue Liu, Jinxuan Li, Haochen Zhang, Dalian Univ of Technology, China

Infragravity-wave Dominance at Sea-Dikes fronted by Very and Extremely Shallow Foreshores
Christopher H Lashley, Jeremy D Bricker, Delft Univ of Technology; Jentsje van der Meer, IHE Delft, Netherlands; Corrado Altomare, Ghent Univ; Tomohiro Suzuki, Flanders Hydraulics Research, Belgium

Investigation on the Wave Attenuation and Reflection Induced by a Submerged Barrier in Presence of Small Forward and Reversed Currents

Ruey-Syan Shih, Tungnan Univ; Wen-Kai Weng, Chi-Yu Li, National Taiwan Ocean Univ; Chia-Ying Wu, Ying-Chi Wang, Tungnan Univ, Taiwan China

28. OCEAN TECHNOLOGY III: Jackup, Jacket Structure (V. 1)

Monday June 17 16:20 S Pacific 3

Chair: L. Boswell, City, Univ of London, UK

Co-Chair: Hsuan-Teh Hu, National Cheng Kung Univ, Taiwan China

Research on Spud Leg's Driving Depth Prediction and Punch-through Potential Analysis of Jack-up Drilling Platform

Guoxian Xu, Shujie Liu, Renjun Xie, Gang Tong, CNOOC Research Inst; Qishuai Yin, Nanding Hu, China Univ of Petroleum-Beijing, China

Automated Jacket Design

Eli Yecheskiel Kling, Bianca Ferri, Brede Bjørhovd, Frode Strand, Sigmund Mongstad Hope, Kværner AS, Norway

Nonlinear Finite Element Analysis of Bridge Pier under Static and Dynamic Loading

Hsuan-Teh Hu, C-H Kuo, P-J Chen, K-Y Liu, K-M Wu, National Cheng Kung Univ, Taiwan China

A New Method Based on Simulation Experiment to Evaluate Bearing Capacity of Jack-up Piles in Shallow Gas Stratum

Yongqi Ma, Jin Yang, Guodong Yang, Li Lei, Nanding Hu, Shanshan Shi, Xun Liu, Tianwei Zhang, China Univ of Petroleum (Beijing), China

Research on the Empirical Formula of Slip Stress for the Expansive Stressed Grouted Clamp

Xiang Shi, Zhen Zhang, Wan Lin Zhu, Ocean Univ of China, Bai Chen Song, Offshore Oil Engineering, China

29. ADVANCED SHIP TECH III: Navigation 1 (V. 4)

Monday June 17 16:20 S Pacific 4

Chair: DC Wan, Shanghai Jiao Tong Univ, China, China

Co-Chair: Jin Kim, KRISO, Korea

Experimental Study on Association Model of Yangtze River Artificial Waterway and Ship

Yutian Tan, Lizheng Wang, Shunhuai Chen, Yan Jin, Aokui Xiong, Guo Li, Wuhan Univ of Technology, China

Experimental Study on Navigation Performance of 10000-ton Ship in Yangtze River Artificial Waterway with Inclined Bank

Guo Li, Lizheng Wang, Shunhuai Chen, Aokui Xiong, Yan Jin, Xiaosa Zhao, Yutian Tan, Wuhan Univ of Technology, China

A Calculation Method of the Navigable Width of LNG Carrier's Two-Lane Channel Based on Risk Acceptance Criteria

Fan Zhang, Yuanqiao Wen, Yubin Wang, Wuhan Univ of Technology, China

Research on Marine Traffic Accident Prediction Method Based on GA-SVR Model

Wenjie Qiao, Chengyong Liu, Feng Xiong, Wuhan Univ of Technology, China

Ship Traffic Volume Prediction Based on Optimized RBF Neural Networks in Anqing Section of Yangtze River

Mingwei Li, Yadong Yang, Wuhan Univ of Technology, China

A System Dynamics Model for Vessel Traffic Flow Evolution

Zhao Liu, Xuesong Wang, Yujie Jiang, Jingxian Liu, Wuhan Univ of Technology, China

Research on Ship Domain of Restricted Channel Waters Based on the Ship-Following Theory

Quandang Ma, Fucai Jiang, Qingbo Fan, Wuhan Univ of Technology, China

A Method for Establishing the Length of Moving Safety Zone around LNG Carrier Sailing in Yangtze River Downstream

Qifan Chen, Chengyong Liu, Yi Wan, Wuhan Univ of Technology, China

30. GEOTECH III: Soil Characterization 1 (V. 2)

Monday June 17 16:20 Sea Pearl 2-4

Chair: Abbas Abdollahi, AECOM, USA

Interpretation of Indentation Tests on a Sensitive Clay of Eastern Canada

Vincenzo Silvestri, Claudette Tabib, École Polytechnique de Montréal, Canada

Case Study on Softening Effect of Coastal Soft Soil Foundation under Cyclic Loading

Yandi Wang, Shuwang Yan, Tianjin Univ, China

Correlation between Undrained Shear Strength and Tip Resistance of Miniature T-bar Penetrometer for Kaolin Clay

Shemelyn Sespeñe, Sen Sven Falcon, Jong Seok Yun, Min Jy Lee, Yun Wook Choo, Kongju National Univ, Korea; Chun Fai Leung, National Univ of Singapore, Singapore

Experimental Measurement of Thixotropy and Sensitivity in Gulf of Mexico Clay

Husham Al-Janabi, Charles Aubeny, Texas A&M Univ, USA

31. UNDERWATER III: Dynamics (V. 1)

Monday June 17 16:20 Nautilus Ste

Chair : Masahiko Nakamura, Kyushu Univ, Kasuga, Japan

Motion Simulations of AUV “YUMEIRUKA” with X-rudder

Masahiko Nakamura, Kyushu Univ; Tadahiro Hyakudome, JAMSTEC, Japan

Numerical Study of Flow Characteristics Around Underwater Vehicle Model at High Reynolds Number

Yuan Gao, Guoxiang Hou, Liuming Yang, Yang Yu, Huazhong Univ of Sci & Tech, China; Chang Shu, National Univ of Singapore, Singapore

CFD Study of the Hydrodynamic Characteristics of Blended Wing Unmanned Underwater Gliders

Mukesh Guggilla, R Vijayakumar, IIT Madras, India

Numerical Motion Analysis of ROV coupled with Tether Applying 24-DOF Absolute Nodal Co-ordinate Formulation

Thant Zin Htun, Hiroyoshi Suzuki, Asako Kuwano, Osaka Univ; Hiroto Tomobe, Mitsui E&S; Tomoya Inoue, JAMSTEC, Japan

Study on Longitudinal Stability of a Supercavitating Underwater Vehicle with Planing

Seonhong Kim, Min-Jae Kim, Yongrae Jung, Kurn Chul Lee, Agency for Defense Development, Korea

Data-driven Locomotive Strategies of the UVMS Propelled by Undulating Fins

Ruichen Ma, Inst of Automation, CAS; Huajun Du, Beijing Aerospace Automatic Control Inst; Rui Wang, Yu Wang, Shuo Wang, Inst of Automation, CAS, China

Analysis of the Vibration Characteristic of a Small Autonomous Underwater Vehicle Based on Transfer Function Method
Arom Hwang, Koje College; Youngmo Kong, DS Mirae-Tech, Korea

Numerical Simulation of Hull-propeller Interaction for Underwater Vehicle with Pump-jet Propulsor
Ronggang Nie, Ziru Li, Wei He, Ke-qiang Chen, Xiao-Ming Hu, Wuhan Univ of Technology, China

TUESDAY 08:00

32. HYDRODYNAMICS IV: MetOcean 2 (V. 3)

Tuesday **June 18** **08:00** **Coral 1**

Chair: Christos Stefanakos, SINTEF Ocean, Norway

Real-time Estimation of Ocean Wave Spectra from Vessel Motions in Sea Trial Using Kalman Filter

Hansung Kim, HeonYong Kang, MooHyun Kim, Texas A&M Univ, USA; JeEun Choi, DongYoung Lee, Daewoo Shipbuilding & Marine Engineering, Korea

Full-Scale Seakeeping Trials: An Integrated Analysis of Sea-State and On-board Data

Thomas Puzzer, Riccardo Pigazzini, Silvio Davison, Mitja Morgut, Giorgio Contento, Univ of Trieste, Italy

Characterization of Wave Features of the Wave Tank Based on a Wave-generating Ball

Sheng-tao Chen, Qiang Qiu, Jiao-yi Hou, Da-yong Ning, Zeng-meng Zhang, Hao Tian, Ying-long Chen, Hong-wei Du, Yong-jun Gong, Dalian Maritime Univ, China

Mapping Ocean Waves Using LIDAR Technology

Thomas Kabel, Christos Georgakis, Aarhus Univ; Allan Zeeberg, TOTAL, Denmark

Low-frequent Catastrophic Coastal Disaster Events around Tonga; Survey of Coastal Boulders Distribution on Tongatapu Island and Analysis Using Stochastic Modelling of Tropical Cyclones

Sota Nakajo, Osaka Univ; Junichi Ninomiya, Kanazawa Univ, Japan

UAV-based Short-term Variation Observation of Saltmarsh Wetland Before and After the Storm Tide

Huatao Yang, Huan Li, Weiqi Dai, Hohai Univ; Sheng Lu, Nanjing Normal Univ, China

A Study on the Analysis of Specific Physical Characteristics of Typhoon JEBI at Osaka Bay

Jong Hyeok Jeon, Takashi Tomita, Nagoya Univ, Japan

33. SLOSHING II: Coupled Sloshing Response 1 (V. 3)

Tuesday **June 18** **08:00** **Coral 2**

Chair: Sebastian Schreier, Delft Univ of Technology, Netherlands

Co-Chair: Kyong-Hwan Kim, KRISO, Daejeon, Korea

Coupling Effects of Sloshing and Barge Motion in Variable Bathymetry

Yan Su, Shikun Zhou, Zhiliang Gao, Jianxi Yao, Wuhan Univ of Technology, China

Sloshing Effect due to Hydrodynamic Interaction and Hydroelastic Response of Enclosed Large Floating Multi-Bodies

Zhi Yung Tay, Singapore Inst of Technology; Ling Wan, Newcastle Univ, Singapore

CFD Analysis for Fuel Tank Design of Large Civil Aircraft

Francesco Gambioli, Airbus Operations Ltd., UK; Leon Malan, Arnaud Malan, Univ of Cape Town, South Africa; Mark Narrayay, Airbus Operations Ltd., UK;

Free Vibration of Horizontally Submerged and Partially Liquid-filled Cylindrical Shells

Yueyang Han, Xiang Zhu, Tianyun Li, Luyan Pan, Huazhong Univ of Sci & Tech, China

34. RENEWABLE ENERGY IV: Wave Energy 4 (V. 1)

Tuesday June 18 08:00 Coral 4

Chair: Nathan M Tom, National Renewable Energy Laboratory, USA
Co-chair: Krishnakumar Rajagopalan, Univ of Hawaii, USA

Economics of Offshore Wave Energy – Can It Match Offshore Wind?

E. Friis-Madsen, H.C. Sørensen, I. Russel, Wave Dragon; S. Parmeggiani, Energy Consulting Engineer, Italy; J. Fernández-Chozas, Consulting Engineer, Denmark

An Economical Cost Function for the Optimization of Wave Energy Converter Arrays

Marianna Giassi, Valeria Castellucci, Jens Engström, Malin Götteman, Uppsala Univ, Sweden

Numerical Modeling Research at the US Navy Wave Energy Test Site, Honolulu, USA

Krishnakumar Rajagopalan, Patrick Cross, Gerard Nihous, Univ of Hawaii, USA

Tackling the Wave Energy Paradox – Stepping towards Commercial Deployment

Andrea Caio, Thomas Davey, Univ of Edinburgh; Cameron McNatt, Mocean Energy Ltd, UK

35. SUBSEA, PIPELINES, RISERS I: Pipeline 1 (V. 2)

Tuesday June 18 08:00 Coral 5

Chair: Bor-Feng Peng, J Ray McDermott, USA

Co-chair: Frank Lim, 2HOffshore, UK

Pipeline Transport Times and Sea Bottom Temperature – A Case Study

Filip Sund, NORCE; Sigmund Mongstad Hope, Kværner AS, Norway

Collapse Mechanisms of Pipe-in-pipe Systems under External Pressure during Operation

Mahmoud Alrsai, Hassan Karampour, Griffith Univ; Faris Albermani, Central Queensland Univ, Australia

Next Generation Fracture Prediction Models of Pitted Pipelines for Cleaner Energy Transportation

Mojtaba Mokhtari, Robert E Melchers, Univ of Newcastle, Australia

Evaluation of Structural Performance of the Pipe Considering ERW Pipe Manufacturing Process through Numerical Analysis

Seong-Wook Han, Seoul National Univ; Soo-Chang Kang, POSCO, Korea; Sungmoon Jung, FSU, USA; Yeun Chul Park, Inst of Construction & Environmental Eng; Ho-Kyung Kim, Seoul National Univ, Korea

Effect of Initial Imperfection on the Lateral Buckling of Fiber Reinforced Thermoplastic Pipes

Xiangjian Meng, Shuqing Wang, Hui Fang, Lu Yao, Dawei Chu, Ocean Univ of China, China

36. HPM IV: Advances in Welding Technology 1 (V. 4)

Tuesday June 18 08:00 S Pacific 1

Chair: Takuya Hara, Nippon Steel & Sumitomo Metal Corp., Japan

A Simplified Prediction Procedure of Temperature and Deformation Behavior for Ship hull Plate by Moving Thermal Process

Shuiming Zhang, Cungen Liu, Xuefeng Wang, Jiahua Tan, Shanghai Jiao Tong Univ, China

Study on Typical Out-of-Plane Bending Deformation of Hull Plate by High Frequency Induction Heating

Bin Yi, Huazhong Univ of Sci & Tech; Hong Zhou, Jiangsu Univ of Sci & Tech; Jiangchao Wang, Huazhong Univ of Sci & Tech, China

Investigation on Welding Deformation in Fabrication of Offshore Cylindrical Leg Structure and Its Mitigation

Jiangchao Wang, Huazhong Univ of Sci & Tech; Yexing Niu, Shizhong Du, Shanghai Zhenhua Heavy Industry Marine Engineering; Bin Yi, Huazhong Univ of Sci & Tech; Hongquan Zhao, Jiangsu Univ of Sci & Tech, China

Simulation-Based Design of Girth Welds of High-Pressure Pipeline to Improve Tensile Strain Limit for Leakage from Weld Flaws

Hiroto Shoji, Tetsuya Shibatani, Osaka Univ; Satoshi Miki, Kohsuke Inagaki, Fumiaki Kimura, Nippon Steel & Sumikin Engineering; Mitsuru Ohata, Osaka Univ, Japan

Effects of Weld Flaw and Internal Pressure on Ductile Crack Growth of Girth Welded Joints in X65 Pipelines

Fumiaki Kimura, Kohsuke Inagaki, Satoshi Miki, Nippon Steel & Sumikin Engineering; Hiroto Shoji, Tetsuya Shibatani, Mitsuru Ohata, Osaka Univ, Japan

Dynamically-Flexible Arc – A Novel Interpretation for the High Performance GMAW

Regis G Silva, Jair C Dutra, Mateus Barancelli Schwedersky, Cleber Marques, Kaue Riffel, Rafael Albino Bernardi, Federal Univ of Santa Catarina, Brazil

A Study on Deformation of Friction Stir Welded Aluminum Battery Housing Using Inherent Strain Method

Sungwook Kang, Sung Hwan Kim, Hwan Jin Kim, Jae Woong Kim, Korea Inst of Industrial Technology; Hyunsu Ryu, Changwon National Univ; Young Jae Jang, Hyundai Heavy Industries, Korea

Influence of Preheating Flame Composition on Oxy-Hydrogen Gass Cutting Efficiency

Cesar De Jesus Pinzon Acosta, Naoki Osawa, Osaka Univ; Yuichi Ikegami, Air Water Co, Japan

An Application of Fabrication Method to Control Welding Distortion Regarding a Pressure Vessel

Jong Min Kim, Ha Keun Kim, Dong Ju Lee, Hee Tae Lee, Hyundai Heavy Industries

Continue at Session 46

37. COASTAL II Wave Modeling (V. 3)

Tuesday June 18 08:00 S Pacific 2

Chair: Katsuya Hirayama, Port and Airport Research Inst, Japan

Numerical Simulation of Undular Bore Using a Shock-capturing Boussinesq Model

Kezhao Fang, Junkai Wu, Dalian Univ of Technology; Zhongbo Liu, Dalian Maritime Univ; Jiawen Sun, National Marine Environmental Monitoring Center, China

Run Up on Beaches through a Simplified Shallow Water Model

Chiara Favaretto, Luca Martinelli, Piero Ruol, Univ of Padova, Italy

Numerical Experiments of Surf-beat Distribution on a Fringing Reef Generated by Random Wave Penetration

Katsuya Hirayama, National Inst of Maritime, Port and Aviation Tech; Yasuhiro Aida, Nihon Univ, Japan

Wave Forecasting for 168 hours ahead using Group Method of Data Handling

Sooyoul Kim, Tottori Univ; Masahide Takeda, Toa Corp; Hajime Mase, Kyoto Univ; Yoshinosuke Kurahara, Chisato Hara, Yamato Nishiyama, Toa Corp; Koji Kawasaki, Hydro Technology Institute Co, Japan

38. OCEAN TECHNOLOGY IV: Floating Dynamics 1 (V. 1)

Tuesday June 18 08:00 S Pacific 3

Chair: Wengang Mao, Chalmers Univ of Technology, Sweden

Simulation of the Seakeeping Performance of an Air-Cushion Supported Truss Barge Platform for Offshore Wind Turbine

Hongbin Hao, Li Xu, Zhiqun Guo, Harbin Engineering Univ, China; Qingwei Ma, City, Univ of London, UK

Experimental and Numerical Study on the Resonance in the Narrow Gap between a Simplified Floating Hydrocarbon Storage Tanks System

Chi Zhang, Allan Ross Magee, Nianxin Ren, Xiao Liu, National Univ of Singapore, Singapore; Nuno Fonseca, SINTEF Ocean, Norway

A Holistic Examination of the Survivability of Offshore Platforms for the Gulf of Mexico Region

Maria A Rodriguez-Cruz, Adrian Colorado-Moreno, Universidad Veracruzana, Mexico; Santiago Suarez de la Fuente, University College London, UK; José Hernandez-Hernandez, Universidad Veracruzana, Mexico; Rachel Pawling, University College London, UK

A Structural Integrity Management System for a FLNG Structure

Riaz Khan, Zulkarnain B Mahani, Suman Kar, Sok Mooi Ng, PETRONAS, Malaysia

A Study for Improvement on Structural Strength Assessment of Semi-Submersible Unit

Won-Hyuk Choi, Dong Kyoon Kim, Yong-Sun Baik, Seung-Han Moon, Daewoo Shipbuilding & Marine Eng, Korea

39. ADVANCED SHIP TECH IV: Navigation 2 (V. 4)

Tuesday June 18 08:00 S Pacific 4

Chair: DC Wan, Shanghai Jiao Tong Univ, China

Co-Chair: Jin Kim, KRISO, Korea

A Novel Approach for Vessel Trajectory Reconstruction Using AIS Data

Zhi Yuan, Jingxian Liu, Yi Liu, Wuhan University of Technology, China; Zongzhi Li, Illinois Inst of Technology, USA

End-to-End Trajectory Tracking Algorithm for Unmanned Surface Vehicle Using Reinforcement Learning
Kefan Jin, Hongdong Wang, Hong Yi, Shanghai Jiao Tong Univ, China

Study on Ship Dynamic Cooperative under the Basis of Path Planning
Bowei Li, Yanmin Xu, Zheng Chang, Jianyu Wang, Wuhan Univ of Technology, China

Research on Real-time Channel Optimization of Ship Based on Load Balancing Algorithm
Runqing Zhu, Lizheng Wang, Wuhan Univ of Technology, China

A Novel Adaptive Leader-Follower Formation Control Strategy for Underactuated Surface Vehicles
Te Yu, Bo Li, Lei Wang, Chang Zhou, Shanghai Jiao Tong Univ, China

40. GEOTECH IV: Soil Characterization 2 (V. 2)

Tuesday June 18 08:00 Sea Pearl 2-4

Chair: Chi-Fang Lee, CR Classification Society, Taiwan China

Constitutive Modeling of Cyclic Seabed Behavior around Coastal and Offshore Structures: Two Robust Models and Their Predicting Capabilities
Mehmet Barış Can Ülker, Istanbul Technical Univ, Turkey

Cyclic Simple Shear Response of Willamette Valley Soils
Abbas Abdollahi, AECOM, USA

Estimation of Secondary Compression in One-dimensional Consolidation Analysis
Takahiro Yoshidomi, Pisith Hong, Tokai Univ; Koichi Iinuma, Ohba Co; Motohiro Sugiyama, Tokai Univ, Japan

Rheological Properties of Fluid Mud under Large Amplitude Oscillatory Shear
Sihang Nie, Qin Jiang, Li Cui, Changkuan Zhang, Hohai Univ, China

41. UNDERWATER IV: Control (V. 1)

Tuesday June 18 08:00 Nautilus Ste

Chair: Guohua Xu, Huazhong Univ of Science and Technology, China
Co-chair: Hiroyoshi Suzuki, Osaka Univ, Japan

A New Recommender System for Determining Trim and Flight Parameters of Seaglidors
Enrico Anderlini, Giles Thomas, University College London; Catherine Harris, National Oceanographic Centre, UK; Mun Woo, Univ of Western Australia, Australia

Driving Control of Underwater Platform
Lulu Feng, Gang Liu, Jijia Liu, Guohua Xu, Huazhong Univ of Sci & Tech; Ji Kong, Wuhan Huahai Chuangzhi Technology, China

Control of Depth Keeping and Attitude Stability of Self-stabilizing Two-part Towed Vehicle
Shikun Pang, Yinghui Li, Mianjin Wang, Hong Yi, Shanghai Jiao Tong Univ, China

Depth Control of ROVs Based on Disturbance Observer and Double-Loop Sliding Mode Controller
Bolun Huang, Qi Yang, Shanghai Jiao Tong Univ, China

Landing Motion Control of an Underwater Glider for Ocean Floor Resources Exploration
Satoru Yamaguchi, Kyushu Univ; Hirofumi Sumoto, Kagoshima Univ, Japan

Rudder Angle and Rudder Speed Control Based on Valve Controlled Hydraulic Actuator Loading Servo System

Xin Zhang, Wenjin Wang, Guohua Xu, Xiaolong Ma, Huazhong Univ of Sci & Tech; Junhao Wu, HuaHaiChuangZhi Technology Co. Ltd, China

TUESDAY 10:30

42. HYDRODYNAMICS V: Storm Surge, Flooding (V. 3)

Tuesday June 18 10:30 Coral 1

Chair: Decheng Wan, Shanghai Jiao Tong Univ, China

Co-Chair: Susumu Araki, Osaka Univ, Japan

Coastal Hazard: Some Numerical Computations [Oral Presentation]

A Bruschi, F Catini, M L Cassese, R Inghilesi, F Lalli, I Lisi, M Ferla, ISPRA; M Bajo, D Bellafiore, CNR-ISMAR; M Brocchini, F Memmola, M Postacchini, G Zitti, Univ Politecnica della Marche, Italy

Dynamic Flood Hazard Mapping and Its Management System

Application

Guihui Zhong, Shuguang Liu, Zichen Hu, Sha Lou, Hong Zhang, Qi Fang, Tongji Univ, China

Probability Assessment of Flood Embankment in the Radial Sand Ridges Area of the South Yellow Sea

Jianxing Chen, Ya Tan, Ao Chu, Hohai Univ, China

Study on the Hydrodynamics of Rising Bubbles Considering Hydrate Phase Transition During the Shut-in Period in Avoiding the Typhoon

Zheng Liu, Baojiang Sun, Zhiyuan Wang, Hao Li, Shaowei Pan, Bo Xiao, China Univ of Petroleum (East China); Ke Ke, SINOPEC Research Institute of Petroleum Eng, China

Research on Retrieving Typhoon Wind Field Based on Satellite Cloud Data of Himawari-8

Zhiyuan Li, Huan Li, Hohai Univ; Hongtao Guo, Jinling Inst of Tech, China

A Study of the Wind Speed Profile of Taiwan Coastal Area

Jing-Jong Jang, Po Hung Yu, National Taiwan Ocean Univ, Taiwan China

Statistical Analysis on Tropical Cyclone Characteristics over the North Indian Ocean

Thu Hein Si, Fumin Xu, Zelin Cheng, Hohai Univ, China

43. SLOSHING III: Coupled Sloshing Response 2 (V. 3)

Tuesday June 18 10:30 Coral 2

Chair: Chong Ma, National Maritime Research Institute, Japan

Co-Chair: Mi-An Xue, Hohai Univ, China

A Numerical Study of the Effects of the Baffles on Liquid Sloshing in Two-Dimensional Tanks

Chao-Feng Shih, Yung-Wei Chen, Shih-Ping Soon, Sheng-Yu Ho, National Taiwan Ocean Univ, Taiwan, China

A Study on Effects of the Baffles in Reducing Sloshing in a Container under Earthquake Excitation

Mi-An Xue, Yichao Chen, Xiaoli Yuan, Peng Dou, Hohai Univ, China

Numerical Study on the Hydroelastic Effects of the Fluid-Structure Interaction in a Sloshing Tank with Baffles

Hao Qin, Lin Mu, Enjin Zhao, China Univ of Geosciences

Structural Damping of Hybrid Structures Exposed to Sloshing

André Baeten, Augsburg Univ of Applied Sciences, Germany

A Lagrangian Finite Difference Method for Sloshing: Simulations and Comparison with Experiments

Josip Basic, Branko Blagojevic, Martina Andrun, Univ of Split; Nastia Degiuli, Univ of Zagreb, Croatia

Modifications to Improve the Unphysical Interface Motion in Resonant Sloshing Flow Using RANS Model

Jinlong Li, Ke Chen, Yunxiang You, Xinshu Zhang, Shanghai Jiao Tong Univ, China

**44. RENEWABLE ENERGY V:
Offshore Wind 1: Support Structure 1 (V. 1)**

Tuesday June 18 10:30 Coral 4
Chair: Ulf Tyge Tygesen, Rambøll; Denmark

Comparison of Different Soil and Hydrodynamic Force Models on a 13.2MW Offshore Rotor

Luca Oggiano, IFE, Norway; Fabio Pierella, DTU, Denmark; Jorgen Johansson, Ana M. Page, NGI, Norway

Simplified Model for Offshore Wind Turbines with Variable Cross-Section Towers

Yung-Yen Ko, National Cheng Kung Univ, Taiwan China

Vibration Analysis of Monopiled Offshore Wind Turbines with Uncertain Modal Damping

Qianying Cao, Shuai Cong, Ocean Univ of China, China; Sau-Lon, James Hu, Univ of Rhode Island, USA; Huajun Li, Ocean Univ of China, China

Early-age Movement in Grouted Joints for Offshore Applications – Determination of the Development of Grout-stiffness

Dario Cotardo, Michael Haist, Ludger Lohaus, Leibniz Universität Hannover, Germany

An Investigation of Long-Term Cyclic Behavior of Tripod-Pile Foundation for Offshore Wind Turbines in Sand

Wenjun Lu, Ga Zhang, Tsinghua Univ, China

Study on the SCFs of the Tower-Foundation Joints in the Jacket Base Offshore Wind Turbine

Wendi Qi, Yongchun Yang, Ocean Univ of China, China

A Methodology to Estimate the Risk of Ringing on Offshore Wind Turbine Gravity Based Foundations

Christophe Peyrard, EDF R&D LNHE; Matteo Capaldo, EDF R&D,ERMES; Sylvain Saviot, EDF R&D LNHE; Jeffrey Harris, Ecole Nationale des Ponts et Chaussees, France

45. SUBSEA, PIPELINES, RISERS II: Pipeline 2 (V. 2)

Tuesday June 18 10:30 Coral 5
Chair: Frank Lim, 2H Offshore Engineering, UK.

A Design Overview of Innovative Spool Connection Assembly

Wenwen Shen, Sean Dennis, Wood PLC; Joe Cenin, Woodside Energy, Australia

Numerical Study of Engineering Options for Protection of Offshore Pipelines

Zuodong Liang, Dong-Sheng Jeng, Griffith Univ, Australia

Optimising the Johan Castberg Trawl Interference Design Using Close Lay of Rigid Flowlines and Structural Reliability Analysis

Odd Martin Lyngsaunet, Per R Nystrom, IKM Ocean Design; Geir Endal, Erik Levold, Halvor Stokholm, Equinor ASA, Norway

Advanced Pipeline Crossing Analysis

Abdul Rahman El-Chayeb, Don Xiaodong Wang, Faris Ragheb Kamal, Oussama Takieddine, National Petroleum and Construction Co, United Arab Emirates

Influence of Ship Towing Anchor on Submarine Pipeline

Zhiqiang Yu, Langxiong Gan, Jianguang Yue, Lei Zhang, Yuanzhou Zheng, Wuhan Univ of Technology, China

A Brief Function for Estimating the Influence of Soil Resistance Variation on Pipeline Walking Caused by Thermal Transient

Zhaohui Hong, Yue Yan, Dongfeng Fu, Shuwang Yan, Tianjin Univ, China

46. HPM V: Advances in Welding Technology 2 (V. 4)

Tuesday June 18 10:30 S Pacific 1

Chair Satoshi Igi, JFE Steel, Japan

A Study on Welding Distortion Mitigation by Gas Heating Using a Linearized Inherent Strain Method

Hector O Ruiz, Naoki Osawa, Sherif Rashed, Osaka Univ, Japan

Technical Review on the Welding Technology and Properties of High Manganese Steels

Keiji Ueda, Daichi Izumi, Koichi Nakashima, Satoshi Igi, JFE Steel, Japan

Influence of Alloying Elements in Low Transformation Temperature Filler Metals on Microstructure and Mechanical Properties

Doohyeon Kim, Youngchai Lee, Jae Hee Lee, Changhee Lee, Hanyang Univ, Korea

Investigation of Mechanical and Microstructural Properties of Friction Stir Spot Welding of Dissimilar Ultra-high Strength Steels [Oral presentation]

Sung-Tae Hong, Mounarik Mondal, Hrishikes Das, Young Jin Yum, Univ of Ulsan; Kwang Jin Lee, Korea Inst of Industrial Technology, Korea

47. COASTAL III: Tide & Estuary (V. 3)

Tuesday June 18 10:30 S Pacific 2

Chair: Ray-Yeng Yang, National Cheng Kung Univ, Taiwan China

Co-Chair: Naoyuki Inukai, Nagaoka Univ of Technology, Japan

Exploratory Morphodynamic Modeling of the Evolution of a Multi-outlets Estuarine-bay System: Case Study of the Lingding Bay, Pearl River Delta

Min Su, Peng Yao, Zhan Hu, Sun Yat-Sen Univ, China

Tidal Dynamics Response to Intensive Land Reclamation in the Lingding Bay of the Pearl River Estuary Over the Last Century

Nanyang Chu, Peng Yao, Qingshu Yang, Sun Yat-Sen Univ, China

EOF Analysis Exploring Factors Contributing to Temporal and Spatial Variations in the Tidal Level of the Yangtze River Estuary

Yuan Shi, JianFeng Tao, Zheng Gong, Ya Tan, Hohai Univ, China

Application of Modified Nonstationary Tidal Harmonic Analysis Approach to Data Recovery of Missing Water Level Measurements of Yangtze Estuary

Min Gan, Yongping Chen, Hohai Univ, China; Shunqi Pan, Cardiff Univ, UK; Ying Liu, Shicheng Liu, Hohai Univ, China

Seasonal Flood Discharge Influences on the Water and Sediment Movement at the Guan River Estuary and the Channels

Lin Zhao, Yi Xu, Ocean Univ of China, China

48. OCEAN TECHNOLOGY V: Floating Dynamics 2 (V. 1)
Tuesday June 18 10:30 S Pacific 3

Chair: Xiaochuan Yu, Univ of New Orleans, LA, USA

An Experimental Analysis on the Motion Responses of a Semi-submersible Offshore Aquaculture Platform in Waves

Hang-Fei Liu, Chun-Wei Bi, Yun-Peng Zhao, Dalian Univ of Technology;
Yong Cui, Chang-Tao Guan, Yellow Sea Fisheries Research Inst, China

Numerical Analysis of Resistance and Dynamic Behavior of Gravity Cage involving Multiple Cages with the Same Internal Volume

Chun-woo Lee, Pukyong National Univ, Korea; Hirome Kinoshita, Nichimo Co, Japan; Subong Park, Kyusuk Choi, Dayun Lee, Pukyong National Univ, Korea

Operation Capability of an Ultra-Deep Water Drillship

Xu Yang, Hongbo Dou, Guolong Chen, CNOOC Research Inst, China

Design and Assessment Approach of Flexible Connectors for a Double-module Semi-submersible Platform near Island and Reef

Minggang Tang, Zhengwei Zhang, Zepeng Guo, Jun Ding, Enrong Qi, Xuekang Gu, China Ship Scientific Research Center, China

Single Level Topside Design of Mid-sized FPSO for Cost Saving and Risk Avoidance

Beom-Seon Jang, Seoul National Univ; Seung-Kyun Park, Mirae Engineering; In-Chul Jung, Korean Register; In-Sung Song, Mirae Engineering; Dae-Eun Ko, Dong-Eui Univ; Sang-Woong Han, Mirae Engineering, Booki Kim, Seoul National Univ, Korea

49. ADVANCED SHIP TECH V: Propulsor (V. 4)

Tuesday June 18 10:30 S Pacific 4

Chair: Jin Kim, Korea Research Inst of Ships & Ocean Eng, Korea

Study on the Influence of Double Propeller Disturbance on the Hydrodynamic Performance of Surface-piercing Propellers

Yu-Ming Yuan, Xing Zheng, Harbin Engineering Univ, China; Qing-Wei Ma, City, Univ of London, UK

Numerical Simulation and Design of Parameter Matching on the Open Water Performance of CRP

Xiaoning Jiang, Tieli Li, Junming Hu, Yan Lin, Dalian Univ of Technology, China

A Research of the DP Thruster Analysis with Various Duct Shapes for the Model Test

Hyung Do Song, Young-Shik Kim, Korea Research Inst of Ships & Ocean Eng; Jung-Chun Suh, Seoul National Univ, Korea

Optimization Design and Analysis of Marine Ducted Propellers by RANS/Potential Flow Coupling Method

Weikang Du, Spyros A Kinnas, Univ of Texas at Austin, USA

Hydrodynamic Design and Verification of Water-jet Mixed-flow Pump Bases on Controllable Velocity Moment Method

Gang Chen, Bin Yu, Sheming Fan, Youlin Cai, Marine Design & Research Inst of China, China

Research on Vector Control Algorithm of Waterjet Propelled Crafts Based on SQP Algorithm

Renyuan Chang, Jiangming Ding, Jiabing Jiang, Wuhan Univ of Technology, China

Numerical Prediction of Pressure Fluctuations on Cruise Ship Hull Induced by Podded Propulsors
Yiming Huang, Yifan Yang, Wei He, Tao-tao Wang, Wuhan Univ of Technology, China

On Scale Effect of Open-water Characteristics of Podded Propulsor Based on RANS Solver
Yi-fan Yang, Wei He, Zi-ru Li, Ting-qiu Li, Wuhan Univ of Technology, China

50. GEOTECH V: Suction Bucket Foundation (V. 2)

Tuesday June 18 10:30 Sea Pearl 2-4

Chair Pan Hu, Univ of Western Australia; Australia
Co-Chair: Yun W Choo, Kongju Univ, Korea

Shake Table Testing for Suction Bucket Foundation Wind Turbine Seismic Response
Muhammad Zayed, Kyungtae Kim, Ahmed Elgamal, Univ of California, San Diego, USA

Axial Load-Transfer Curves for Suction Bucket Foundations in Sand
Sorin Grecu, Amin Barari, Lars Bo Ibsen, Aalborg Univ, Denmark

Field Application of Glass Fiber-reinforced Plastic (GFRP) Suction Pile
Ju-Hyung Lee, Jae-Hyun Kim, KICT; Nghiem Xuan Tran, Sung-Ryul Kim, Seoul National Univ, Korea

Calibration of an Analytical Model for Tensile Loaded Suction Buckets
Patrick Gütz, Martin Achmus, Leibniz Univ Hannover, Germany

Cyclic Bearing Capacity Model Test of Suction Multi-bucket Foundation of Offshore Wind Turbine
JiaQiang Wu, YongChun Yang, ShuangChen Liu, Ocean Univ of China, China

Effects of Scour on Stiffness of Wide Shallow Bucket Foundation and 1st Natural Frequency of Offshore Wind Turbine
Yu Yuan, Run Liu, Jijian Lian, Dengfeng Fu, Haiyang Zhang, Yingchun Wang, Tianjin Univ, China

Upper Bound Solution of the Horizontal Bearing Capacity of a Composite Bucket Shallow Foundation in Sand
Guangsi Chen, Run Liu, Jijian Lian, Hongyan Ding, Ye Yao, Tianjin Univ, China

51. UNDERWATER V: Design (V. 1)

Tuesday June 18 10:30 Nautilus Ste

Chair: Satoru Yamaguchi, Kyushu Univ, Japan

Cavitation Analysis and Optimization Design of V-Bracket
Jiangbo Zhu, Xi Chen, Xiaoling Shen, China Ship Development & Design Center, China

Model Experiment and Numerical Research on Hydrodynamic Performance of Conformal Rudder in Open Water
Shuo Zhai, Zhihua Liu, Naval Univ of Engineering, China

Development of Remotely Operated Underwater Vehicle and Applications to the Sea
Ikuo Yamamoto, Akihiro Morinaga, Koki Ura, Nagasaki Univ, Japan

Characteristics of Autonomous Underwater Vehicle (AUV) under Different Navigational Conditions Research
Xiaoning Jiang, Tieli Li, Meihong Yang, Yan Lin, Dalian Univ of Technology, China

The Conceptual Design and Basic Design of an Underwater Intelligent Drone for the Arctic Ocean

Shojiro Ishibashi, Kiyotaka Tanaka, Hiroshi Yoshida, JAMSTEC; Takashi Shinbori, Takayuki Uemura, Masato Takegaki, KOWA Co., Ltd, Japan

Simulation of Free Running Maneuvers of Unmanned Underwater Vehicles Based on a CFD Study

Christian Weissenfeld, Moustafa Abdel-Maksoud, Hamburg Univ of Technology, Germany

Research on Submarine Buried Oil and Gas Pipeline Autonomous Inspection System of USV

Lei Gao, Hai-Tao Gu, Liang Feng, Shenyang Inst of Automation, CAS, China

TUESDAY 13:10

2019 Professor Jin S Chung Award Lecture

Tuesday 13:10 Coral 4, 6F

Global Energy Demand and Supply: Future Opportunities and Challenges [Oral presentation]

Doug Fairchild, ExxonMobil Upstream Integrated Solutions, USA

52. HYDRODYNAMICS VI: Loads, Added Resistance, Drag Reduction (V. 3)

Tuesday June 18 14:00 Coral 1

Chair: Yonghwan Kim, Seoul National Univ, Korea

A MDHOBEM Energy Radiated Method to Evaluate Added Wave Resistance of Ship

Xi Chen, Yi Ren, Hai-song Xiao, Xin-gong Cai, Marine Design & Research Inst of China; Ren-chuan Zhu, Shanghai Jiao Tong Univ, China

Study on Ship Added Resistance in Regular Head Waves on Panel Method

Xujie Wang, Ocean Univ of China; Jing Zhao, Qingdao Univ of Sci & Tech; Peng Liu, Pengfei Cao, Tongshun Yu, Ocean Univ of China, China

Experimental Study on the Added Resistance of KVLCC2 in Irregular Waves

Jin-Won Yu, Jonghyeon Lee, Jeongbeom Seo, Jung-Eun Choi, Inwon Lee, Pusan National Univ, Korea

Experimental Study on the Interaction between Focused Waves and Pipe Pile Enclosure Structure

Hui Yang, Yun-Peng Zhao, Chun-Wei Bi, Dalian Univ of Technology; Guan-Chang Tao, Yong Cui, Yellow Sea Fisheries Research Inst, CAS, China

Wave Basin Tests of Innovative Offshore Fishfarm Concept

Rene Lindeboom, MARIN, Netherlands; Lars Bjar, Moss Maritime; Kåre Olav Krogenes, Viewpoint Seafarm AS, Norway; Joost Sterenbor, MARIN, Netherlands

53. TSUNAMI I: Generation & Observation (V. 3)

Tuesday June 18 14:00 Coral 2

Chair: Hua Liu, Shanghai Jiao Tong Univ, China

Smoothed Particle Hydrodynamics (SPH) Modelling of Tsunami Waves Generated by a Fault Rupture

Ruaa Hisham Wana, Natalia Perez del Postigo Prieto, Jason Hughes, David Graham, Alison Raby, Univ of Plymouth, UK; Colin Whittaker, University of Auckland, New Zealand

Short Wavelength Tsunami Observation by Using Deep Ocean Bottom Pressure Gauges

Naotaka Chikasada, National Research Inst for Earth Science and Disaster Resilience, Japan

Numerical Investigations on Sea States Estimation Based on the Convolution Neural Networks Deep Learning Technique

Wenyang Duan, Ke Yang, Limin Huang, Harbin Engineering Univ, China

Numerical Approach in the Study of Tsunami-like Waves and Comparison with Experimental Data

Daisuke Nishiura, JAMSTEC, Japan; Davide Wüthrich, Ecole Polytechnique Federale de Lausanne, Switzerland; Mikito Furuichi, Shun Nomura, JAMSTEC, Japan; Michael Pfister, Haute Ecole d'Ingenierie et d'Architecture de Fribourg; Giovanni De Cesare, Ecole Polytechnique Federale de Lausanne, Switzerland

4D Mapping of Sea State by Stereo Photographic Imaging

Antonie Oosterkamp, Sigmund Clausen, Torleif Lethe, NORCE, Norway

54. RENEWABLE ENERGY VI:

Offshore Wind 2: Support Structure 2 (V. 1)

Tuesday June 18 14:00 Coral 4

Chair: Christophe Peyrard, EDF R&D LNHE, France

Co-Chair: Anand Natarajan, Technical Univ of Denmark, Denmark

Fatigue Analysis of Offshore Wind Turbine Support Structures Considering Uncertainty of Load [Oral presentation]

Gee Nam Lee, Donghyawn Kim, Yongjin Kim, Duc Vu Ngo, Kunsan National Univ, Korea

A Nonlinear Potential Flow Model for High-frequency Wave Loads and Ringing Response of Offshore Wind Turbines

Yi Zhang, Bin Teng, Dalian Univ of Technology, China

Physical Model Testing of Wave Impact Forces on Fixed Foundations of Offshore Wind Turbines

Pedro Lomonaco, Timothy Maddux, Bret Bosma, Oregon State Univ; Andrew T Myers, Northeastern Univ; Sanjay A. Arwade, Spencer Hollowell, Hannah M. Johlas, Univ of Massachusetts, USA

Modeling of Non-simultaneous Ice Crushing Loads on Large Sloped Cone of Wind Turbines

Li Zhou, Shifeng Ding, Jiangsu Univ of Science & Technology; Wei Shi, Dalian Univ of Technology; Feng Diao, China Ship Scientific Research Center; Pu Gong, Shanghai Electric Wind Power Group; Qingfeng Wang, Jiangsu Univ of Science & Technology, China

Experimental Investigations on Ice Induced Vibrations of a Monopile-type Offshore Wind Turbine in Bohai Sea

Yufeng Tian, Yan Huang, Wei Li, Tianjin Univ, China

Uncertainties in the Design of Floating Offshore Wind Turbine Structures [Oral presentation]

Do-Eun Choe, Prairie View A&M Univ; Steffen Shalley, VL Offshore; Jeong-Yun Won, Barr Engineering; Sung Young Boo, VL Offshore; Hyoung Chul Kim, Prairie View A&M Univ, USA

55. SUBSEA, PIPELINES, RISERS III: Pipeline 3 (V.2)

Tuesday June 18 14:00 Coral 5

Chair: Hongbin V. Wang, ExxonMobil UIS, USA
Co-Chair: Frank K. Lim, 2H Offshore Engineering, UK

Experimental Study on the Dynamic Response of a Submarine Pipeline Collided by a Dropped Anchor

Ciheng Zhang, Zhipeng Zang, Yiping Zhang, Zhixiong Chen, Tianjin Univ, China

The Development of a New Type of Deep-water Surface Conductor Joint

Guoxian Xu, Shujie Liu, Renjun Xie, Gang Tong, Chaowei Li, CNOOC Research Inst, China

Experimental Study of Wave-induced Dynamic Response around Trenched Pipelines in Silty Seabed

Chao Wei, Yanyan Zhai, Jisheng Zhang, Yuan Gao, Hohai Univ, China

Standing Wave-induced Interaction of Pipeline and Saturated Sandy Seabed

Xiaowen Wang, Jian-Min Zhang, Tsinghua Univ, China

Analysis of Hydrodynamic Characteristics of a Multi-Arc Smooth Cylinder Based on DES

Li Zhang, Chuanming Zhou, Weimin Chen, Shanghai Ship and Shipping Research Inst, China

56. HPM VI: Fatigue & Fracture 1 (V. 4)

Tuesday June 18 14:00 S Pacific 1

Chair: Gaute Gruben, SINTEF Industry, Norway

True Fatigue Life Calculation Using Digital Twin Concept and Operational Modal Analysis

Erik B Pedersen, Dennis Jørgensen, Hans Riber, LIC Engineering, Denmark; Jonas Ballani, Sylvain Vallaghe, Benjamin Paccaud, Akselos SA, Switzerland

Very High Cycle Fatigue Tests with a Resonance-regulated Device for Testing of Large-scale Cast Iron and Steel Specimens

Peter Schaumann, Luka Radulovic, Jan Kulikowski, Leibniz Univ Hannover; Attila Alt, Germany

Vibration Induced Fatigue Integrity Evaluation of Small Bore Piping Using Belief Networks

Arvind Keprate, DNV GL; RM Chandima Ratnayake, Univ of Stavanger, Norway

Multiaxial Fatigue Assessment of Typical Fillet Welded Details based on Mesoscopic Plastic Strain

Sudath C Siriwardane, Univ of Stavanger, Norway

Influence of Long-Time Service at Elevated Temperature on the Material Behavior

Hyeong-Yeon Lee, Woo-Gon Kim, Korea Atomic Energy Research Inst, Korea

The Microstructure Characterization and Mechanical Property of 460MPa Class Crack Arrest Steel Plate for Large Container Ships

Peng Zhang, Xiaoshu Wang, Jie Long, Jie Li, Wuyang Iron and Steel, China; Baojun Zhao, The University of Queensland, Australia

57. COASTAL IV: Waves on Structures (V. 3)

Tuesday June 18 14:00 S Pacific 2

Chair: Bing Chen, Dalian Univ of Technology, China

Analysis of Oblique Wave Transmission and Reflection by Comb-Type Caisson Breakwaters

Xinyu Wang, Yong Liu, Ocean Univ of China, China

Numerical Investigations of Wave Interaction with Double Curtain Wall Breakwaters Using Improved MPS Method

Iddy Iddy, Qin Jiang, Yonglan Zhang, Lizhu Wang, Changkuan Zhang, Hohai Univ, China

Propagation of Solitary Wave over Impermeable Submerged Double Breakwaters

Lai Jiang, Jisheng Zhang, Hohai Univ, China

Three-Dimensional Numerical Simulation of the Interaction between Regular Waves and Perforated Caisson Breakwater

Lin Zhao, Jian Liu, Ocean Univ of China, China

CFD Analysis on Wave Load Mitigation Effect of Porous Walls on Offshore Structures

Bing Chen, Long Wang, Dezhi Ning, Dalian Univ of Technology, China; Lars Johanning, Univ of Exeter, UK

Spatial Distribution of Overtopping on Rubble Mound Breakwaters under Oblique Waves

Luca Martinelli, Matteo Volpato, Chiara Favaretto, Piero Ruol, Univ of Padova, Italy

Wave Overtopping and Water Inflow through Rubble Mound of Gravity Seawall

Kojiro Suzuki, Port and Airport Research Inst; Kiyohiro Okada, Pacific Consultants, Japan

An Analysis Solution for Wave Propagating through a Fixed and Floating Poroelastic Medium

Yuan-Jyh Lan, National Taiwan Ocean Univ, Taiwan, China

58. OCEAN TECHNOLOGY VI: Floating Dynamics 3 (V. 1)

Tuesday June 18 14:00 S Pacific 3

Chair: Eva Loukogeorgaki, Aristotle Univ. of Thessaloniki, Greece

Co-Chair: Hung-Jie Tang, National Cheng Kung Univ, Tainan, Taiwan, China

Safety Research on a Coupled Feeder Vessel and Cages System for Ocean Aquafarm

Yong Jiang, Chaohe Chen, South China Univ of Tech; Yu Cao, Qiaojiao Jia, Andong Liu, Shanghai Ocean Univ, China

Optimal Mooring System Deployment with the Varying Water Depth for the Vessel Working in Different Operational Area

Mingxiao Liang, Shengwen Xu, Xuefeng Wang, Shanghai Jiao Tong Univ; Dahui Liu, Zhejiang Univ; Aibing Ding, Shanghai Jiao Tong Univ; Qingfeng Wang, Jiangsu Univ of Science and Tech, China

Station Keeping Systems for Offshore Wind Turbines

Jinlong Qi, Offshore Oil Eng Co., China; Xin Xu, COTEC Inc, USA; Yong Luo, Shanghai Jiao Tong Univ; Yu Du, Shanghai Dong Hai Wind Power Co., China; Dongming Fu, Mingfei Wang, COTEC Inc, USA

Linear and Nonlinear Dynamic Coupled Analysis for Floating Body with Mooring Lines and Risers With or Without Bending & Torsion Effect of Riser

Byoung Wan Kim, Hyun-Seok Kim, Korea Research Inst of Ships & Ocean Eng, Korea

Motion Response of a Moored Semi-Submersible VLFS over Multi-Slope Seabed

Yiting Wang, Xuefeng Wang, Shengwen Xu, Lei Wang, Shanghai Jiao Tong Univ, China

59. ADVANCED SHIP TECH VI: Structures (V. 4)

Tuesday June 18 14:00 S Pacific 4

Chair: Deyu Wang, Shanghai Jiao Tong Univ, China

An Experimental Study on Buckling Behavior of Cruciform Columns made of SBHS400

Moe Komeda, Jing Nie, Kiyoshi Ono, Waseda Univ; Takeshi Miyashita, Nagaoka Univ of Technology; Seiji Okada, IHI Infrastructure Systems, Japan

Structural Strength Analysis of Five-Hull Ship with Different Bow Angles

Bin Hu, Fucui Jiang, Quandang Ma, Qingbo Fan, Wuhan Univ of Technology, China

Study on Ultimate Strength Analysis and Reinforcement Methods of Side Structure with Openings of Large Cruise Ship Superstructure

Haotian Hu, Xiang-shao Kong, Jin Gan, Yong-shui Lin, Weiguo Wu, Wuhan Univ of Technology, China

Ultimate Strength of Bilge Panels in Container Ships under Combined Axial Compression, Bending and Lateral Pressure

Jinju Cui, Deyu Wang, Shanghai Jiao Tong Univ, China

Study of Sandwich Structural Strength for Power-CAT

Daobing Zhang, Hanju Hui, Zhixin Xiong, Zhiquan Huang, Shanghai Maritime Univ, China

The Study of Configuration Optimization for Air Cushion Vehicle Skirt Based on CATIA-Abaqus Parametric Finite Element Method

Shengjie Xu, Shanghai Jiao Tong Univ; Zhongke Zhang, Marine Design & Research Inst of China; Xiaoyuan Gao, Shanghai Jia Tong Univ; Tao Ma, Marine Design & Research Inst of China, Wenyong Tang, Shanghai Jiao Tong Univ, China

Structural Analysis of the Cylinder Subsection Assembly Correction System

Zuyao Tu, Tang Xu, Yuhao Zeng, Huazhong Univ of Sci & Tech, China

60. GEOTECH VI: Offshore Foundation 1 (V. 2)

Tuesday June 18 14:00 Sea Pearl 2-4

Chair: Yun Wook Choo, Kongju National Univ, Korea

A Rapid Loading Test of a Bored Pile and Pile Construction Management Method

Hikaru Yoshida, Shohei Ishida, Daiken Sekkei, Inc; Yamazaki Tomoya, Nippon Concrete Industries; Mori Toshihiro, Kumagai Gumi Co; Yukihiko Kani, Eiton Co, Japan

Assessment of the Bearing Capacity of a Pile with Geotechnical Design Parameters Based on Chemical Weathering Indices

Young-Woo Song, Sheung-Hwan Lee, Hee-Jun Lee, Choong-Ki Chung, Seoul National Univ, Korea

Shaft Friction to Driving of Large-Diameter Super-Long Pipe Pile Considering Pile Running

Jiangsong Yin, Sa Li, Tianjin Univ; Yaocun Wang, Panhua Construction Group; Huailiang Li, Shantian Huang, COOEC, China

Compaction Grouting to Improve the Pile Bearing Capacity in Non-cohesive Soil

Peter Geißler, Johannes Schwarz, Pablo Cuéllar, Götz Hüsken, Matthias Baeßler, Hans-Carsten Kühne, Bundesanstalt für Materialforschung und -prüfung (BAM), Germany; Carmine Morrone, Università Degli Studi di Salerno, Italy

Model Test on Casting Finish Control Method for Steel Piles Driven by the Vibratory Hammer Method

Tomoyuki Ogata, Shuichi Shimomura, Keigo Kamiya, Nihon Univ, Japan

Model Experimental Study on the Load Sharing of Piled Raft on Foundation Underpinning

Chengcan Wang, Korea Univ of Science & Technology; Jintae Han, SeokJung Kim, Korea Inst of Civil Eng & Building Tech; YoungEun Jang, HeonJoon Park, Ulsan National Inst of Science & Technology, Korea

Fundamental Study on End Resistance of Bored Precast Pile

Toshihide Yamashita, MAEDA Co; Hideto Sato, Nihon Univ Junior College; Yutaka Kubo, Keizo Minagawa, System Keisoku Co; Katsuhiko Kanuka, Kanuka Design Co, Japan

61. UNDERWATER VI: Panel

Tuesday June 18 14:00 Nautilus Ste

Chair: S Yamaguchi, Kyushu Univ, Japan

Panelists

TUESDAY 16:20

62. HYDRODYNAMICS VII: Loads, Dynamics (V. 3)

Tuesday June 18 16:20 Coral 1

Chair: Masashi Kashiwagi, Osaka Univ, Japan

Computations and Field Measurements of Wave Forces on Pile-cap Foundations in China-Maldives Friendship Bridge

Hong Zhang, Yongtao Zhang, Ningbo Gao, CCCC Second Harbor Engineering Co, China

The Study of Mitigation Measures for Impact on the Existing Marina Caused by a New Terminal

Zhao Luo, Hong-xing Lin, Chao Wang, CCCC Second Harbour Engineering, China; Say-Chong Lee, JACOBS, USA

Identifying Wave Loads During Random Sea Using Structural Response

Michael Vigso, Christos Georgakis, Aarhus Univ; Rune Brincker, Technical Univ of Denmark, Denmark

Comparison of Experimental and Theoretical Wave Forces on Elevated Structures

Shelby N. Sipes, Tori Tomiczek, Sarah E. Mouring, US Naval Academy, USA

Time-domain Analysis on Motion Response of a JIP Spar under the Action of Freak Wave

Zhen Liu, Xiaojian Ma, Yucheng Zou, Guohui Wang, Qingyang Wang, Jiangsu Univ of Science & Technology, China

Experimental Study on Irregular Wave Action on a Pile Group with a Double Row Side-by-Side Arrangement

Haochen Zhang, Shuxue Liu, Jinxuan Li, Yarong Zhang, Dalian Univ of Technology, China

Comparative Analysis of Static Method and Time-Domain Simulation Method of DP Calculation for A DP3 Drillship

Jinhui He, Shanghai Jiao Tong Univ; Haibin Zhang, Marine Design & Research Inst of China; Renchuan Zhu, Shanghai Jiao Tong Univ; Baohe Yang, Marine Design & Research Inst of China, China

63. TSUNAMI II: Propagation & Transformation (V. 3)

Tuesday June 18 16:20 Coral 2

Chair: Daisuke Nishiura, JAMSTEC, Japan

Optical & Acoustic Boundary Layer Wave Measurements & Modeling in Shallow Coastal Waters

Charles R Bostater, Jr., Jennifer Closson, Bingyu Yang, Tyler Rotkiske, Florida Inst of Technology, USA

Numerical Study on Sea Bottom Boundary Layer and Bed Shear Stress under Tsunami

Hitoshi Tanaka, Nguyen Xuan Tinh, Tohoku Univ, Japan

Numerical Investigation of Solitary Wave over a Flat Bottom Using Non-Hydrostatic Model with Viscous Effects

Jingxin Zhang, Jian Wang, Jun Chen, Hua Liu, Shanghai Jiao Tong Univ, China

Experimental Study on Applicability of Hydro-Plane Type Removable Breakwater as Tsunami Energy Dissipater for Visor Gate

Tetsuya Hiraishi, Kyoto Univ; Ryoukei Azuma, Osaka Technical Inst; Hideaki Handa, Tadao Ito, Marushima Aqua System, Japan

Interaction between Internal Waves and Surface Waves over a Slope-Shelf

Chih-Min Hsieh, National Kaohsiung Univ of Sci & Tech; Ming-Hung Cheng, National Taiwan Ocean Univ; Robert R Hwang, Academia Sinica; Yih-Feng Peng, National Chi Nan Univ; Wen-Chang Yang; National Applied Research Labs, Taiwan, China

Application of Tsunami Simulator in Oceans and Coastal Areas “T-STOC” to Storm Surge Simulation

Koji Kawasaki, Masaki Nimura, Hydro Technology Institute Co; Tomokazu Murakami, Shinya Shimokawa, National Research Inst for Earth Scienc & Disaster Resilience, Japan

**64. RENEWABLE ENERGY VII:
Offshore Wind 3: Floating Structure 1 (V. 1)**

Tuesday June 18 16:20 Coral 4

Chair: Pedro Lomonaco, Oregon State Univ, Oregon, USA

Study on the Hydrodynamic Responses of Floating Offshore Wind Turbine Foundations with Different Shapes

Chaohe Chen, Yuefu Yang, Yijun Shen, South China Univ of Technology, China

Equivalent Static Wave/Wind Loads for the Structural Design of Semi-Submersible Platform of Floating Offshore Wind Turbine

Chao Li, Shunyun Zheng, Aixian Peng, Shengtao Zhou, Yiqing Xiao, Harbin Inst of Technology, China; Gang Hu, Univ of Sydney, Australia; Haifeng Wang, Tsinghua Univ, China

Dynamic Analysis of Mooring Break for a Semi-Submersible Floating Offshore Wind Turbine

Gang Ma, Liang Zhong, Harbin Engineering Univ, China; Qing-Wei Ma, City, Univ of London, UK; Yao-Wen Zhu, Hong-Wei Wang, Harbin Engineering Univ, China

Applicability of a Toroidal Hull Structure for Floating Wind

Kurt Delpeche, Pacifico Energy K.K., Japan

A Parametric Study of a Semi-submersible Platform for an Offshore Wind Turbine in Mexican Coasts

Adrian I Colorado-Moreno, Maria Rodriguez-Cruz, Universidad Veracruzana; Aldo R Cruces-Giron, Mexican Petroleum Inst; Jose Hernandez-Hernandez, Universidad Veracruzana; Ivan Felix-Gonzalez, Mexican Petroleum Inst, Mexico

65. SUBSEA, PIPELINES, RISERS IV: Riser 1 (V. 2)

Tuesday June 18 16:20 Coral 5

Chair Frank K. Lim, 2H Offshore Engineering, UK
Co-chair: Woojae Seong, Seoul National Univ, Korea

Experimental Investigation on Vibrations of a Drilling Riser in a Jack-up Platform under Environmental and Operating Loads

Zhixiong Chen, Yuxin Sun, Zhipeng Zang, Tianjin Univ; Cong Wang, CNPC Eng Tech Research, China

Anti-Typhoon Drilling Riser Freestanding Mode Study

Liangbin Xu, Leixiang Sheng, CNOOC Research Inst; Jinlong Wang, Lihui Li, Hui Zhang, 2H Offshore, China

Experimental Investigation on Vibrations of a Vertical Riser under Combined Waves and Current

Cong Wang, Jing Zhao, Zhenwen Liu, CNPC Engineering Technology Research; Zhixiong Chen, Zhipeng Zang, Tianjin Univ, China

A Model Test on a Response Characteristics of a Free Hanging Riser

Y.J. Kwon, D.H. Jung, B.W. Park, J.H. Jung, S.H. Oh, Korea Research Inst of Ships and Ocean Engineering, Korea

Analysis on the Wave-Induced Fatigue Analysis of Marine Drilling Riser Based on the Time Domain Method [Proceedings only]

Yanbin Wang, Deli Gao, Chenyu Meng, China Univ. of Petroleum (Beijing), China

66. HPM VII: Fatigue & Fracture 2 (V. 4)

Tuesday June 18 16:20 S Pacific 1

Chair Arvind Keprate, DNV GL, Norway

Local Approach for Elastic-Plastic Fracture Assessment of Cracked Component under Mixed Mode Loading

Kazuma Shimizu, Mitsuru Ohata, Hiroto Shoji, Osaka Univ; Taichiro Kato, Hiroyasu Tanigawa, National Inst for Quantum & Radiological Sci & Tech, Japan

Mechanical Properties and Charpy Absorbed Energy of SBHS400

Jing Nie, Daiki Kitazume, Kiyoshi Ono, Waseda Univ; Takeshi Miyashita, Nagaoka Univ of Technology; Kengo Anami, Shibaura Inst of Technology; Toshio Matsumura, The Takigami Steel Construction, Japan

Calibration of Pipeline Steel Model for Computational Running Ductile Fracture Assessment

Gaute Gruben, Stephane Dumoulin, Håkon O Nordhagen, SINTEF Industry; Morten Hammer, Svend T Munkejord, SINTEF Energy Research, Norway

Prediction of Brittle Fracture at the Toes of Weld Access Hole of the Welded I-section Beam End

Junwei Wang, Koji Azuma, Sojo Univ; Tsutomu Iwashita, Ariake College; Toshiomi Itatani, Nagai Steel Works, Japan

Prediction of Brittle Fracture at the Crack Tips of Improved Weld Access Hole of the Full-scale Beam-to-Column Assembly

Satoshi Jinbo, Koji Azuma, Sojo Univ; Toshiomi Itatani, Nagai Steel Works; Masato Nikaide, Nippon Steel & Sumitomo Metal, Japan

Control Strategy of Stress Concentration Factors for Five-planar Tubular Y-joints under Axial Force

Shiliu Bao, Dalian Univ of Technology; Bin Wang, Powerchina Huadong Engineering; Yong Shi, Jiangsu Longyuan Offshore Wind Power; Kanmin Shen, Powerchina Huadong Engineering; Xin Li, Dalian Univ of Technology, China

67. COASTAL V: Behavior of Structures (V. 3)

Tuesday June 18 16:20 S Pacific 2

Chair: Piero Ruol, Univ of Padova, Padova, Italy

Physical Model Tests on Stability of Sea Dike Under Construction

Yanqiu Meng, Xujie Liu, Chao feng Tong, Guoping Chen, Shichang Yan, Yuhang Xu, Wanwei Zhang, Hohai Univ, China

Time-Frequency Domain Motion Responses of Moored Floater under Freak Wave

Wenbo Pan, Chen Liang, Cheng Cui, Guoxing Huang, Zhuowei Zhou, Ningchuan Zhang, Qian Gu, Yichao Sun, Dalian Univ of Technology, China

Experimental Study on Physical Model of Concrete Block Quay Wall with Wave Dissipation Hole Structure

Deshuang Yu, Guanting Zhou, Guirong Lu, Xinming Wang, Zhanhang Wang, Chinese Academy of Fishery Sciences; Jinsong Gui, Dalian Ocean Univ, China

The Performace of an "Active" Submerged Breakwater by a CFD Analysis

Pasquale Filianoti, Luana Gurnari, Univ Mediterranea of Reggio Calabria

Design Method of Joint Plates Installed in a Caisson Type Seawall

Kazuki Horii, Shibata Industrial; Kohiro Suzuki; Port and Airport Research Inst; Yuichiro Takebe, Yoshio Nishino, Shibata Industrial, Japan

68. OCEAN TECHNOLOGY VII: Floating Dynamics 4 (V. 1)

Tuesday June 18 16:20 S Pacific 3

Chair: Alan M. Wang, Offshore Oil Engineering Co., China

Hydrodynamic Response Analysis for a Deepwater Spar under its Mooring Failures

Yang Yua, Shuai Hao, Lixin Xu, Tianjin Univ, China

Evaluation and Life Extension of Mooring Systems

Yiyong Liu, Huoping Wang, CNOOC, China; Yong Luo, COTEC Inc, USA; Weiquan Zhu, Hui Shen, COTEC; Xing Tao, Yunlian Shao, ASAC Jiangsu, China

Evaluation of the Dynamic Responses of Truss Spar Platforms for Different Mooring Materials in Intact and Damaged Line Conditions

Montasir O Ahmed, Anurag Yenduri, V J Kurian, Universiti Teknologi PETRONAS, Malaysia

Study on Rectification Method for Cruciform Joint Exceeding IACS Fabrication Tolerance (Phase II)

Hyung-Jin Ko, Sang-Woo Lee, Yong-Yoon Kim, Hyoung-June Jeon, Kyung-seok Lee, Jin-Sik Yoo, Ki-sub Choi, Jung-sin Jae, Daewoo Shipbuilding & Marine Eng, Korea

69. ADVANCED SHIP TECH VII: Strength (V. 4)

Tuesday June 18 16:20 S Pacific 4

Chair: Beomseon Jang, Seoul National Univ, Korea
Co-Chair: C Kawakita, Mitsubishi Heavy Industries, Japan

**Study on the Optimum Design of the IMO Type C LNG Fuel Tank
Considering Characteristics of Cryogenic Materials**

Joo Hyun Kim, Tae Jun Kim, Hoon Kyu Oh, Byung Ki Choi, Hyundai Heavy Industries, Korea

**Experimental and Numerical Investigation on the Ultimate Strength of
Steel Welded Ring-stiffened Conical Shell under External hydrostatic
Pressure**

Jung Min Sohn, Teguh Muttaqie, Pukyong National Univ; Sang-Rai Cho, Univ of Ulsan, Korea

**Hydro-elastic Effect on the Ultimate Strength Assessment of the Very
Large Ore Carrier(VLOC) Based on the Segmented Model Test**

In-Gyu Ahn, Seung-Yoon Han, Byoung-hoon Jung, Hyundai Heavy Industries, Korea

**Vibration Analysis for Ship Structures Employing the Algebraic Dynamic
Condensation Method**

Seung-Hwan Boo, Jun-Bum Park, Korea Maritime and Ocean Univ, Korea

70. GEOTECH VII: Offshore Foundation 2 (V. 2)

Tuesday June 18 16:20 Sea Pearl 2-4

Chair: Chun Fai Leung, National Univ of Singapore, Singapore

Research on Pile Stick-up Analysis of Deepwater Platform

Fei Wu, CNOOC Research Inst, China

ZRB Foundations Alternative Design Approach

Meysam Banimahd, UWA; Justin C Kelly, Edwin Shim, Wood PLC, Australia

**Offshore Stone Columns – Equipment, Quality Control and Outlook for
Future Applications**

Wilhelm S Degen, Eleonora Di Mario, Betterground (HK) Ltd., Hong Kong, China

Beyond Predicting Stiffness of Disturbed Foundation

Tomas Sabaliauskas, Lars Bo Ibsen, Aalborg Univ, Denmark

**Deformation and Bearing Capacity of Vertical Load Plate Anchors
Subjected to Static and Cyclic Loads**

Jianhua Wang, Zhaoxin Wang, Tianjin Univ, China

**Analysis of Pull-out Behavior of Tunnel-type Anchorage for Suspended
Bridge Using Scaled Model Tests**

Seunghwan Seo, Moonkyung Chung, Korea Inst of Civil Engineering and Building Technology, Korea

71. ARCTIC I: Ice Kinematics (V. 1)

Tuesday June 18 16:20 Nautilus Ste

Chair: Dmitri Matskevich, ExxonMobil Upstream Research Co., USA
Co-chair: Konstantin A. Kornishin, Rosneft Oil Co., Russia

An Experimental Model of Wave Attenuation in Pancake Ice

Alberto Alberello, Univ of Adelaide; Filippo Nelli, Univ of Melbourne;
Azam Dolatshah, Swinburne Univ of Technology; Luke G Bennetts, Univ of Adelaide, Australia; Miguel Onorato, Univ of Turin, Italy; Alessandro Toffoli, Univ of Melbourne, Australia

Influence of Water on Collisions of Floating Ice Blocks

Aleksey Marchenko, University Centre in Svalbard, Norway; Vladimir Markov, Lomonosov Moscow State Univ, Russia; Rocky Taylor, Memorial Univ of Newfoundland, Canada

Risk Assessment and Case Analysis of Sea Ice Dynamic Accumulation in Water Intakes of Nuclear Power Plants

Ning Xu, National Marine Environmental Monitoring Center; Yanlin Wan, Dalian Univ of Tech; Boqiang Zhao, Peng Xu, Liaoning Hongyanhe Nuclear Power Co; Yuan Chen, Shuai Yuan, Wenqi Shi, Yuxian Ma, National Marine Environmental Monitoring Center; Jianqiao Sun, Tianjin Univ, China

Study on Extreme Parameters of Drift Ice in the Northern Barents Sea

Chenglin Duan, Songtao Li, Zhifeng Wang, Sheng Dong, Shanshan Tao, Ocean Univ of China, China

WEDNESDAY 08:00

72. HYDRODYNAMICS VIII: Loads, Turbulence (V. 3)

Wednesday June 19 08:00 Coral 1

Chair: Hamn-Ching Chen, Texas A&M Univ, TX, USA

Computation and Measurement of Wake Field of Fin Installed in Boundary Layer

Rikizo Yamashita, Sumitomo Heavy Industries Marine & Eng; Jun Ando, Hina Matsuura, Yasuyuki Toda, Osaka Univ, Japan

Application of a Decision Support Tool for the Collision Avoidance of a Container Vessel

Panagiotis Mzythras, Evangelos Boulougouris, Gerasimos Theotokatos, Univ of Strathclyde, UK

Study on the Influence of Filter Model on Ship Capsizing

Qian Qiao, Ju Fan, Lizhi Wang, Shanghai Jiao Tong Univ, China

Laboratory Tests Regarding Hydrodynamic Forces and Accelerations Exerted on Long Line Aquaculture Systems in Offshore Conditions

Jannis Landmann, Rieke Santjer, Leibniz Universität Hannover; Rebekka Gieschen, Nils Goseberg, TU Braunschweig; Arndt Hildebrandt, Leibniz Universität Hannover, Germany

73. TSUNAMI III: Structure & Scouring (V. 3)

Wednesday June 19 08:00 Coral 2

Chair: Koji Kawasaki, Hydro Technology Institute Co., Japan

Numerical Analysis of Liquefaction of Sandy Ground Induced by Tsunami

Yoshihiro Okumura, Kansai Univ; Ryosuke Kato, Nikken Sekkei Civil Engineering; Fusao Oka, Kyoto Univ, Japan

Development of a Rational Prediction Method of Topographical Change by a Tsunami

Sayed Masihullah Ahmadi, Yoshimichi Yamamoto, Maiki Hayakawa, Tokai Univ, Japan

An Experiment Study on Wave Loads on a Submerged Horizontal Plate in Solitary Wave

Qian Wang, Yongliu Fang, Hua Liu, Shanghai Jiao Tong Univ, China

SPH-DEM Simulation on Stability of Composite Breakwater against Long-lasting Tsunami

Tetsuya Iwamoto, Hitoshi Nakase, Tokyo Electric Power Services; Daisuke Nishiura, Hide Sakaguchi, Japan Agency for Marine-Earth Sci & Tech; Junji Miyamoto, Kazuhiro Tsurugasaki, Toyo Construction Co., Junji Kiyono, Kyoto Univ, Japan

Submerged Wall-Trench Systems to Suppress Tsunami Impact on Coast
Akalanca Silva, Susumu Araki, Osaka Univ, Japan

Numerical Estimation of the Motion of Oil Storage Tank for Tsunami Wave with Fluid-Structure Interaction Analysis
Youhei Takagi, Reiji Tazawa, Takanori Hino, Yasumi Kawamura, Yokohama National Univ, Japan

**74. RENEWABLE ENERGY VIII:
Offshore Wind 4: Floating Structure 2 (V. 1)**

Wednesday June 19 08:00 Coral 4

Chair: Eva Loukogeorgaki, Aristotle Univ of Thessaloniki, Greece

Accounting for Hydroelasticity in the Analysis of Offshore Wind Turbine Spar-Type Platforms

Nikos Mantadakis, Eva Loukogeorgaki, Aristotle Univ of Thessaloniki, Greece; Madjid Karimirad, Queen's Univ of Belfast, UK

An Optimization for the Mooring System of a 10MW Spar Type Floating Wind Turbine in Time Domain

Jiyuan Men, Fasuo Yan, Qingwei Ma, Harbin Engineering Univ, China

Wave Tank Experiment and Coupled Simulation Analysis of Barge-type Offshore Wind Turbine

Ko Matias Adrian Kosasih, Hideyuki Niizato, Shigeki Okubo, Shunsuke Mitani, Hitachi Zosen; Hideyuki Suzuki, Univ of Tokyo, Japan

A Rapid Figure Selection of Darrieus Wind Turbine Based on DMST Model and CMA-ES Algorithm

Yaoran Chen, Dai Zhou, Zhaolong Han, Yan Bao, Jie Su, Lei Hang, Shanghai Jiao Tong Univ, China

75. SUBSEA, PIPELINES, RISERS V: Riser 2 (V. 2)

Wednesday June 19 08:00 Coral 5

Chair : Mason Wu, Trafigura Trading LLC, TX, USA

Probabilistic Assessment of the Criticality of Riser/Mooring Line Overlapping

François Lirola, SAIPEM, France

Dynamic Simulation of Steel Lazy Wave Riser Excited at the Top-End

S'Oh, D Jung, B W Park, J H Jung, Y J Kwon, B W Nam, B W Kim, Korea Research Inst of Ships & Ocean Eng, Korea

On the Effects of a Buoyancy Module on the Dynamics of Flexible Risers Transporting Fluid

Hyung-Taek Kim, Oliver M O'Reilly, Univ of California, Berkeley, USA

76. HPM VIII: Asset Integrity I: Structure, Asset Integrity Management 1 (V. 4)

Wednesday June 19 08:00 S Pacific 1

Chair: Ali Reza, Exponent, Los Angeles, CA, USA

The Role of a Piping Material Verification Program to Minimize Loss of Containment Incidents in the Oil and Gas Industry

Brian A Ott, Ali Reza, Carmen H Osorio-Amado, Exponent Inc, USA

Risk-Informed Asset Management Framework for Aged Port Facilities against Potential External Hazards

Abe Nezamian, Michael Kartsounis, Aurecon, Australia

Buckling of Corroded Metallic Domes under External Pressure

Jan Blachut, Univ of Liverpool, UK; Dariusz Sala, AGH Univ of Science and Tech, Poland

Non-Destructive Detection of Near Surface Defects in Steel Products

Tanja S Eisele, Hermann Lücken, Esslingen Univ of Applied Sciences; Siegfried Schmauder, Univ of Stuttgart, Germany

77. COASTAL VI: Storm Surge & Protection (V. 3)

Wednesday June 19 08:00 S Pacific 2

Chair: Luca Martinelli, Univ of Padova, Padova, Italy

Co-Chair: Kezhao Fang, Dalian Univ of Technology, China

Lessons Learned from Storm Surge Disasters and Technical Issues on Countermeasures in Japan

Hiroyasu Kawai, National Inst of Maritime, Port and Aviation Tech. (MPAT), Japan

Impact of Submerged Breakwater on the Extreme Wave Estimation in the Xinghua Bay

Zhifeng Wang, Miao Yu, Songtao Li, Shanshan Tao, Sheng Dong, Zegao Yin, Tongshun Yu, Ocean Univ of China, China

Case Study on Designing Adaptation Measures against Storm Surge Disasters along Innermost Coast of Ariake Sea, Japan

Yoshihiko Ide, Noriaki Hashimoto, Masaru Yamashiro, Mitsuyoshi Kodama, Kyushu Univ, Japan

Protection Performance against Storm Surge Due to Vertical Telescopic Breakwater

Koki Kawai, Shogo Tokunaga, Katsumi Seki, Taro Arikawa, Chuo Univ, Japan

Study on the Durability of Quay with Soil Solidifier Against Tsunamis

Naoki Tsuruta, Kojiro Suzuki, Port and Airport Research Inst; Kazunori Tatewaki, Katsuhiro Okada, Ministry of Land Infrastructure Transport & Tourism; Shota Asahi, Port and Airport Research Inst, Japan

Long-lead-time Prediction of Storm Surge Using Effective Controlling Parameters and Adaptive Neuro-Fuzzy Inference System Approach

Wei-Ting Chao, Chih-Chieh Young, National Taiwan Ocean Univ; Chian-Yi Liu, National Central Univ, Taiwan, China

Study on Classification of the Storm Surge Warning

Guilin Liu, Ocean Univ of China, China; Baiyu Chen, Univ of California-Berkeley, USA; Zhikang Gao, Yuanxin Li, Xiao Li, Liping Wang, Ocean Univ of China, China

Beach Response During Storm Conditions on Pingtan Coast

Wenshan Li, National Marine Data & Info. Service; Shaowu Li, Tianjin Univ; Hui Wang, National Marine Data & Info. Service; Ye Liu, Tianjin Univ, China

78. OCEAN TECHNOLOGY VIII: LNG, Liquefaction, Bunkering 1

(V. 1)

Wednesday June 19 08:00 S Pacific 3

Chair: Hong Gun Sung, KRISO, Daejeon, Korea

Cost-based Optimization of Natural Gas Liquefaction Process

Heechang Son, Youngsub Lim, Seoul National Univ, Korea

A Study on Loading and Offloading Operability of FLBT

D.W. Jung, Y.H. Kim, S.K. Cho, D.H. Jung, H.G. Sung, Korea Research Inst of Ships & Ocean Eng, Korea

Development & Application of FLBT Simulator System for Operational Safety Assessment

In-Young Gong, Seong-Phil Ann, Seung-Jun Yi, Young-Hwan Kim, Hyeon-Jin Jang, Jae-Seok Han, SafeTechResearch; Hong-Gun Sung, Dong-Ho Jung, Korea Research Inst of Ships & Ocean Eng, Korea

Structural Assessment Techniques for a Newly Developed LNG Cargo Containment System

Haeng-Sung Heo, Kwang-Jun Park, Seongwoo Park, Seungmin Kwon, Yoon-Sik Hwang, Joong-kyoo Kang, Daewoo Shipbuilding & Marine Eng. (DSME), Korea

Status of LNG Bunkering Infrastructure Focusing on North America

Won-Jun Cho, Bio Friends; Bongjoo Shim, H&H Worldwide; Kidong Kim, KOGAS, Korea

79. ADVANCED SHIP TECH VIII: Cavitation (V. 4)

Wednesday June 19 08:00 S Pacific 4

Chair: Hua Liu, Shanghai Jiao Tong Univ, China

CFD Sensitivity Studies of Turbulent Model, Grid, Roughness and Scale Effect for Full Scale Ship Performance Estimation

Seong-Wook Jeong, Seung-Gyu Jeong, Sung-Gu Park, Young-Doo Kim, Lloyd's Register Asia; Suak Ho Van, Kwang Soo Kim, KRISO, Korea

Research and Analysis of Inlet Duct Cavitation of Water Jet Propulsion

Guorui Ji, Xiaohui Yin, Yan Zhang, Marine Design & Research Inst of China, China

Comparison of SST $k-\omega$ and Smagorinsky Model in Cavitation Simulation around NACA0012

Minsheng Zhao, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China

Numerical Investigation of Inhibition Effect of Placed Obstacles on Cloud Cavitation

Yong Li, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China

Non-Cavitation Control to NACA0012 Hydrofoil

Weiwei Jin, Xin Chen, Shanghai Jiao Tong Univ, China

Numerical Investigation of the Natural and Ventilated Cavitation Dynamics around NACA66 Hydrofoil

Tiezhi Sun, Zihao Wang, Li Zou, Zhe Sun, Zhi Zong, Dalian Univ of Technology, China

CFD and Experimental Analysis of Planing Trimaran Performance

Yan Li, JiangMing Ding, Wuhan Univ of Technology, China

Design by Optimization and Flume Test of Ducted Horizontal Axis Marine Current Turbines

Weikang Du, Huy Pham, Spyros A Kinnas, Univ of Texas at Austin, USA

80. GEOTECH VIII: Simulation & Experiment (V. 2)

Wednesday June 19 08:00 Sea Pearl 2-4

Chair: Yin Wang, Dalian Univ of Technology, China

Development of Particle-scale CFD-DEM Models and Application to Hydraulic Analysis of Marine Sands

Yin Wang, Yichen Tao, Zhe Ma, Lingxin Zhou, Dalian Univ of Technology, China

A Particle Method for Simulation of Submarine Landslides and Mudflows
Y K Chow, S Li, C G Koh, National Univ of Singapore, Singapore

Mitigation Method of Rockfall Hazard on the Huge Rock Slope Using Field Tests and Numerical Simulations
Hoki Ban, Kangwon National Univ; Young-Cheol Hwang, Sangji Univ;
Taemin Ha, Kangwon National Univ, Korea

Numerical Study on Pile Countermeasure Against Liquefaction Behind Retating Wall
Kakuta Fujiwara, Tokai Univ, Japan

81. ARCTIC II: Ice Properties (V. 1)

Wednesday June 19 08:00 Nautilus Ste

Chair: Aleksey Marchenko, University Centre in Svalbard, Norway

Strength-Temperature Relationships for First-year, Second-year and Multi-year Sea Ice
M E Johnston, National Research Council Canada, Canada

Physical and Mechanical Characteristics of Sea Ice in the Kara and Laptev Seas
Sergey M. Kovalev, Victor N. Smirnov, Vladimir A. Borodkin, Aleksandr I. Shushlebin, Nikolay V. Kolabutin, Arctic Research Centre; Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav O. Efimov, Petr A. Tarasov, Arctic Research Centre; Dmitry A Volodin, IK "SIBINTEK" LLC, Russia

Comparative Study of Brash Ice Growth Formulation and Its Application in Early Phase of Port Design
Cayetana Ruiz de Almirón de Andrés, Toni Skogström, Aker Arctic Technology; Esa Eranti, Eranti Engineering Oy, Finland

A Simulation Study on the Ice Fracture Behaviors in Ice-Lighthouse Interaction Considering Initial Defects and Change of Elastic Modulus
Yang Wang, Zao-Jian Zou, Feng Wang, Teng-chao Lu, Shanghai Jiao Tong Univ, China

Experimental Studies of Influence of the Distance Between Loads on the Nature of Destruction of an Ice Cover when Paired Loads are Moving Over the Ice Cover
Elena G. Rogozhnikova, Amur State Univ of Humanities and Pedagogy; Victor M. Kozin, Inst of Machining & Metallurgy; Vitaliy L. Zemlayk, Sholom-Aleichem Priamursky State Univ, Russia

Numerical Modelling of Interaction of the Hummock with a Seabed in ABAQUS Software
Olga A Sabodash, Alexander T. Bekker, Far Eastern Federal Univ, Russia

Numerical Simulation of Ice Crystal Growth
Yongkui Wang, Lei Ju, Qing Wang, Jianwei Wang, Harbin Engineering Univ, China

WEDNESDAY 10:30

82. HYDRODYNAMICS IX: CFD 1- FSI (V. 3)

Wednesday June 19 10:30 Coral 1

Chair: Edward J Ransley, Univ of Plymouth, UK

Three-Dimensional Numerical Study of Solitary Waves Interacting with a Horizontal Plate

Zhihua Xie, Cardiff Univ; Shiqiang Yan, Qingwei Ma, City, Univ of London;
Thorsten Stoesser, University College London, UK; Lin Lu, Dalian Univ of
Tech, China

**Numerical Simulation and Experimental Study on Drag Reduction of
Circular Cylinder Using Bionic Method**

Cong Chen, Chen Zhao, Tao Zhang, Zixian Cui, Huazhong Univ of Sci &
Tech, China

**MPS Method for Study of Interactions between Solitary Wave and
Submerged Horizontal Plate**

Yanzhang Xu, Guanyu Zhang, Decheng Wan, Gang Chen, Shanghai Jiao Tong
Univ, China

Improved MPS-FEM Coupled Method for FSI in Free-Surface Flows

Guanyu Zhang, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China

MPS for Free Surface Flow with Elastic and Destructible Structures

Takahito Iida, Takefumi Higaki, Osaka Univ, Japan

83. TSUNAMI IV: Flooding (V. 3)

Wednesday June 19 10:30 Coral 2

Chair: Hiroyasu Kawai, National Inst of Maritime, Port and Aviation Tech.
(MPAT), Japan

**Modeling Coastal Urban Flooding Scenario Caused by Tsunami
Breakwater Overtopping**

Akio Nagayama, Kagoshima Univ; Ryoichi Yanagawa, Kagawa College,
Japan

**Added Mass Coefficient of Debris in Short-term Phenomena for
Evaluating Collision Force by Tsunami Debris**

Tadashi Sano, Hitachi Ltd; Akihiro Matsuda, Univ of Tsukuba, Japan

Tsunami Debris Mapping by Optical and LiDAR Remote Sensing

Shinichi Koshimura, Tohoku Univ; Takumi Fukuoka, NTT Data Corp, Japan

**A Study on Reproducibility of Vessel Drifting in Typhoon JEBI using
Wind and Storm Surge as External Force**

Shogo Tokunaga, Kazuhiro Fujiwara, Takuto Haga, Taro Arikawa, Chuo
Univ, Japan

**A Tsunami Scenario Determination Methodology for Risk Assessment of
Coastal Industrial Facilities**

Naoto Kihara, Hideki Kaida, Central Research Inst of Electric Power
Industry; Tatsuto Kimura, Ayumi Nishi, Masahiro Masuko, Naoki Fujii,
Tokyo Electric Power Service, Japan

**Development of an Evacuation Route Selection Method Depending on
Tsunami Level**

Yusuke Sakata, Katsumi Seki, Taro Arikawa, Chuo Univ, Japan

**84. RENEWABLE ENERGY IX: Offshore Wind 5: Floating Structure
3 (V. 1)**

Wednesday June 19 10:30 Coral 4

Chair: Renata Archetti, Univ of Bologna, Italy

**Effect of Heave Plates on Hydrodynamic Response of a Spar-type Floating
Offshore Wind Turbine**

Jithin Jose, Multiconsult Norge AS, Norway; Sung-Jin Choi, DNV GL,
Denmark; Ove Tobias Gudmestad, Univ of Stavanger, Norway

**Long-term Extreme Structural Loads of a Triple-column Spar Floating
Wind Turbine Concept**

Liang Li, Univ of Strathclyde, UK; Jin Wang, Shanghai Jiao Tong Univ, China

A TLP Floating Foundation Design with Novel Tendon Mooring Technology for Hawaii Offshore Wind
Sung Youn Boo, Steffen Shelley, Daejun Kim, VL Offshore, USA

The Investigation of Conceptual Approaches to the Creation of Marine Ice-Resistant Floating Wind Power Plant
Viktor V Elistratov, Alexander Bolshev, Alexander A Panfilov, Peter the Great Saint-Petersburg Polytechnic Univ; Konstantin V Megretsky, Vyacheslav V. Kupreev, CDB ME “Rubin”, Russia

85. SUBSEA, PIPELINES, RISERS VI: Riser 3 (V.2)

Wednesday June 19 10:30 Coral 5

Chair: Frank Lim, China Univ of Petroleum-Beijing, China

Reliability-Based Fatigue Assessment for Subsea Risers and Pipelines
Hany Elost, TechnipFMC, Norway

Early Recognition of Severe Slugging in Pipeline-Riser System using Accelerometer Sensors
Sunah Jung, Haesang Yang, Woojae Seong, Seoul National Univ, Korea

Parametric Vibration Analysis of Top-tensioned Risers with Internal Flow
Fajun Yu, Binqi Xie, Han Wu, Qi Wang, Hemu Shi, Xiaohui Zeng, Inst of Mechanics, CAS, China

Early Detection of Drillstring Washout Based on Hydraulics Model and Pattern Recognition Method
Yipeng Zhao, Baojiang Sun, Guangming Fu, China Univ. of Petroleum (East China); Shujie Liu, Liangbin Xu, Ning Wang, CNOOC Research Inst, China

Dynamic Analysis of SLWR Subjected to Internal Slug Flow Conditions
B.W. Park, S.H. Oh, Y.J. Kwon, J.H. Jung, D.H. Jung, Korea Research Inst of Ships & Ocean Eng, Korea

86. HPM IX: Asset Integrity II: Structure, Asset Integrity Management 2 (V. 4)

Wednesday June 19 10:30 S Pacific 1

Chair: Harovel G. Wheat, Univ of Texas at Austin, USA

Co-Chair: Brian A Ott, Exponent Inc, USA

Tensile Strength Evaluation of Painted Steel from Spot Rusting Grade [Oral Presentation]
Intae Kim, Hyoung-Seok Kim, Pusan National Univ, Korea

Automatically Welded Tubular X-Joints – Welding Procedure and Prediction of the Technical Fatigue Crack Location
Peter Schaumann, Karsten Schuermann, Leibniz Univ Hannover; Andreas Pittner, Michael Rethmeier, BAM, Germany

Buckling of Cylinders with Uneven Length Subjected to Axial Compression
O. Ifayefunmi, N. A. Zulkefli, Universiti Teknikal Malaysia Melaka, Malaysia

Sound Transmission Loss of Finite Double-Plate Partition with Enhanced Columns in Different Surrounding Fluids
Mengqing Huang, Meixia Chen, Huazhong Univ of Sci. & Tech., China

Experimental Study on Load Bearing Capacity of Reinforced Concrete Beam of In-Service High Piled Wharf under Natural Environment

Lin-wang Su, Zong-quan Ying, Shuai Yang, CCCC Fourth Harbor Engineering Inst., China

Ultra-high Performance Concrete Sandwich Structures as Basic Element of Offshore Mega Structures - A Finite Element Model
Jan Markowski, Ludger Lohaus, Leibniz Univ Hannover, Germany

87. COASTAL VII: Sediment Transport (V. 3)

Wednesday June 19 10:30 S Pacific 2

Chair: Charles R. Bostater, Florida Inst. of Technology, FL, USA

Co-chair: Naoyuki Inukai, Nagaoka Univ of Technology, Japan

Application of Real-time Simulation in Dredging Design of Panama Amador Cruiser Terminal

Chao Wang, Zhao Luo, Hongxing Lin, CCCC Second Harbour Engineering, China

Hydrodynamics and Sediment Transport Studies of the Nourishment of Ceinturon Beach, France

Tuan Minh Vu, Thanh Viet Nguyen, Univ of Transport and Communications, Vietnam; Yves Lacroix, SEATECH, Univ of Toulon, France

Experimental Study on Influence of Clay Content on Wave-Seabed Interaction

Jun Zhang, Qin Jiang, Changkuan Zhang, Hohai Univ, China

Flocculation Effects on the Sedimentation Behavior of High-Concentrated Mud Suspensions

Lili Yu, Chunyang Xu, Yongping Chen, Hohai Univ, China

Examinations on Sand Outflow Phenomena by Using a Numerical Model

Kornvisith Silarom, Yoshimichi Yamamoto, Tokai Univ, Japan

An Experimental Study on Cross-shore Morphodynamics of a Composite Sand-Gravel Beach

Muhajjir, Hiroki Suga, Shin-ichi Aoki, Osaka Univ, Japan

88. OCEAN TECHNOLOGY IX: LNG, Liquefaction, Bunkering 2 (V. 1)

Wednesday June 19 10:30 S Pacific 3

Chair: Youngsub Lim, Seoul National Univ, Korea

Reducing Boil-off Rate for Bi-lobed Tank on Small-scale LNG Carrier

Chao Ye, Yan Lin, Yanyun Yu, Dalian Univ of Technology, China

Investigation on Low-pressure Transfer Method of Liquefied Natural Gas (LNG) Without Venting

Kyoung Joong Kim, Lingxue Jin, Sangkwon Jeong, Korea Advanced Inst of Sci & Tech (KAIST); Yeon Suk Choi, Korea Basic Science Inst (KBSI), Korea

Scale Amplification Analysis of FLNG Liquefaction Process in South China Sea Deepwater Gas Field

Xichong Yu, Bin Xie, CNOOC Research Inst; Yaling Wu, China Huanqiu Contracting & Eng Corp; Yuxing Li, China Univ of Petroleum (Huadong); Yan Li, Qing Wang, CNOOC Research Inst, China

Eigenvalue Analysis on Floating LNG Bunkering Terminal Side-by-Side Moored with LNG Carrier and Two LNG Bunkering Shuttles

YunHo Kim, Dong Woo Jung, Bo Woo Nam, Seok Kyu Cho, Dong Ho Jung, Hong Gun Sung, Korea Research Inst of Ships & Ocean Eng, Korea

Optimum Layout Design of Wedges of Thermal Insulation Panel for an LNG Tank Considering Amount of Resin Ropes and Flatness

Do-Hyun Chun, Myung-Il Roh, Seung-Ho Ham, Seoul National Univ; Hoon-Kyu Oh, Sang-Ok Lee, Hyundai Heavy Industries Co., Korea

A Study on Impact Behavior of Glass Fiber Reinforced Polyurethane Foam for Liquefied Natural Gas Cargo Containment Systems

Myung-Sung Kim, Jeong-Hyeon Kim, Seul-Kee Kim, Jae-Myung Lee, Pusan National Univ, Korea

Molecular Design of Refrigerants and Their Applications for Utilizing LNG Cold Energy

Haiyan Wang, Sicong Yu, Chunsheng Wang, Jie Chen, Ming Zhang, Xiaopeng Zheng, CNOOC Research Inst, China

89. ADVANCED SHIP TECH IX: Powering, Performance (V. 4)

Wednesday June 19 10:30 S Pacific 4

Chair: Jiangming Ding, Wuhan Univ of Technology, China

Full Scale Performance Monitoring of Large Merchant Ships and Comparison with Theoretical Predictions

Hideo Orihara, Hisafumi Yoshida, Kenji Takagishi, Japan Marine United Corporation, Japan

Development of A Numerical Model on Displacement Correction for Ship Performance in Calm Seas Based on Full-Scale Measurement

Naoto Sogihara, Akiko Sakurada, Mariko Kuroda, Masaru Tsujimoto, National Maritime Research Inst; Yoshihiko Sugimoto, Ken Hasegawa, Mitsui O.S.K. Lines, Japan

Unsteady Hydrodynamics of a Vertical Surface Piercing Strut by SPH Simulations

Giuliano Vernengo, Univ of Genoa; Riccardo Angelini Rota Roselli, Univ of Rome, Italy; Stefano Brizzolara, Virginia Tech, USA; Roberto Guercio, Univ of Rome, Italy

Adaptive Group Bias Thrust Allocation Algorithm Based on Energy Optimization

Yahao Chen, Haixiang Xu, Hui Feng, Wenzhao Yu, Tieshan Li, Wuhan Univ of Technology, China

Hull Form Modification of Inland Cruise Ship Based on Capsizing Risk Prediction

Yuehua Lou, Lizheng Wang, Min Wang, Wuhan Univ of Technology, China

Prediction of the Calm Water Performance by the Database of the Model Test

Myoung-Soo Kim, Yoo-Chul Kim, JungJoong Kim, Young-Yeon Lee, Kwang-Soo Kim, Haeseong Ahn, Jin Kim, Seung-Hyun Hwang, Korea Research Inst of Ships & Ocean Eng, Korea

Prediction of the Powering Performance for the ONR Tumblehome

Jin-Zhou Liu, Zao-Jian Zou, Hai-Peng Guo, Shanghai Jiao Tong Univ, China

Multi-objective Optimal Design of a Plug-in Hybrid Electric Propulsion System for a Catamaran

Jianyun Zhu, Li Chen, Shanghai Jiao Tong Univ, China

90. GEOTECH IX: Site Characterization (V. 2)

Wednesday June 19 10:30 Sea Pearl 2-4

Chair: Hongbin V. Wang, ExxonMobil Production Company, USA

Co-chair: Vincenzo Silvestri, École Polytechnique de Montréal, Canada

Estimation of Permeability Using Dielectric Constant of Electromagnetic Wave

Seung Jae Lee, Daejeon Univ; Joohyun Seong, Min Hyung Jung, Korea Infrastructure Safety Corp, Korea; Jung Chan Choi, Norwegian Geotechnical Inst, Norway; Hyung-Koo Yoon, Daejeon Univ, Korea

Assessment on Suffusion Sensitivity on Earth-fill Dam Soils in Korea through Seepage Tests

In-Hyun Kim, Hee-jun Lee and Choong-Ki Chung, Seoul National Univ, Korea

Case Studies on Ground Investigation for Liquefaction Mitigation in Kamisu, Japan and Christchurch, New Zealand

Hiroshi Yokawa, Chubu Univ; Atsushi Yashima, Yoshinobu Murata, Keizo Kariya, Gifu Univ; Takayasu Yosihara, Yoshihara Kakou Co, Japan; Misko Cubrinovski, Univ of Canterbury, New Zealand

A New Type of Device Used on Deep-Sea Submarine Terrain Monitoring
Chen Cao, Jiawang Chen, Chunying Xu, Peihao Zhang, Yuan Lin, Han Ge, Zhejiang Univ, China

Liquefaction Evaluation Using Electric Logging Method for Ground Survey of a Detached House

Noriaki Sako, Nihon Univ; Mamoru Fujii, Tokai Univ, Japan

Development of Countermeasure Against Liquefaction of Detached House with Drainage Pipe

Yoshinobu Murata, Keizo Kariya, Atsushi Yashima, Gifu Univ; Hiroshi Yokawa, Chubu Univ; Takayasu Yoshihara, Yoshihara Kakou Co, Japan

Energy Extraction and Wake Velocity Distribution of the Turbine Array with Different Layouts

Can Zhang, Jisheng Zhang, Hohai Univ; Ya Wang, China Design Group; Tiantian Zhang, China Three Gorges Corp, China

91. ARCTIC III: Russian Arctic (V. 1)

Wednesday June 19 10:30 Nautilus Ste

Chair: Yuri P Gudoshnikov, Arctic and Antarctic Research Inst, Russia.

Co-chair: Rocky S Taylor, Memorial Univ of Newfoundland, Canada

Morphometry and Internal Structure of Ice Ridges in the Kara and Laptev Seas

Roman B. Guzenko, Yevgeny U. Mironov, Ruslan I. May, Viktor S. Porubaev, Victor V. Kharitonov, Stepan V. Khotchenkov, Arctic and Antarctic Research Inst; Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav O. Efimov, Arctic Research Centre; Petr A. Tarasov, Rosneft Oil Co, Russia

Geometry and Mass of Icebergs in the Russian Arctic

Ruslan I. May, Roman B. Guzenko, Yevgeny U. Mironov, Aleksey K. Naumov, Andrey A. Skutin, Elena A. Skutina, Dmitriy I. Sobotuk, Georgy A. Zamarin, Arctic and Antarctic Research Inst; Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav O. Efimov, Teymur E. Mamedov, Arctic Research Centre, Russia

Morphometric Parameters of Stamukhas in the Laptev Sea

Yevgeny U. Mironov, Roman B. Guzenko, Viktor S. Porubaev, Victor V. Kharitonov, Stepan V. Khotchenkov, Aleksander V. Nesterov, Arctic and Antarctic Research Inst; Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav O. Efimov, Arctic Research Centre, Russia

Peculiarities of Morphometric Features and Inner Structures of the Ridged Formations in the Ob Bay

Alexey K. Naumov, Elena A. Skutina, Nikolay V. Golovin, Nikolay V. Kubyshkin, Igor V. Buzin, Yuri P. Gudoshnikov, Andrey A Skutin, Arctic and Antarctic Research Inst, Russia

The Main Results of the Iceberg Drift Studies in the Russian Arctic According to Surveys of 2012-2017

I.V Buzin, A.V Nesterov, Yu. P Gudoshnikov, Arctic and Antarctic Research Inst; A.A. Pashali, K.A. Kornishin, Rosneft Oil Co; Ya. O. Efimov, D.S. Stragnikov, Arctic Research Centre, Russia

Submarine Permafrost in the Laptev Sea
Andrey V Koshurnikov, Vladimir E Tumskoy, Vladimir V Skosar, Lomonosov Moscow State Univ; Yaroslav Efimov, Arctic Research Centre; Konstantin Kornishin, Rosneft Oil; Alexander Bekker, Yuri Piskunov, Nikita Tsimbelman, Far Eastern Federal Univ; Denis Kosmach, Tomsk Polytechnic Univ, Russia

Continue at Session 101

WEDNESDAY 13:10

Keynote

Wednesday 13:10 Coral 5, 6F
Digital Twin for Marine Risers [Oral presentation]
Michael S Triantafyllou, Massachusetts Institute of Technology, USA

Keynote

Wednesday 13:10 Nautilus Suite, 6F
Management of Ice Risks to Offshore Operations and Shipping along Canada's East Coast [Invited, Oral Presentation]
Ivana Kubat, National Research Council Canada, Canada

92. HYDRODYNAMICS X: CFD 2; Hydrodynamics (V. 3)

Wednesday June 19 14:00 Coral 1

Chair: Decheng Wan, Shanghai Jiao Tong Univ, China
Co-Chair: SQ Yan, City, Univ London, UK

Numerical Simulation of the Evolution of Wave Breaking in Deep Water
Qunbin Chen, Yuxiang Ma, Guohai Dong, Dalian Univ of Technology, China

Predicting Wind Loads on the Topside of a Drillship Using CFD
Zana Sulaiman, GustoMSC B.V., Netherlands

Numerical Modeling of Multi-fraction Sediments under the Combined Effect of Wave and Current

Tianyue Sun, Jianfeng Tao, Peng Yao, Hohai Univ, China

A Multiphase Particle Method for Interaction between Sluicing Water and Fluvial Mud Bed

Lizhu Wang, Qin Jiang, Hohai Univ, China; Abbas Kyayyer, Kyoto Univ, Japan; Changkuan Zhang, Hohai Univ, China

Validation of a Coupled CFD Model for Evaluating Floating Tidal Systems

S.A. Brown, E.J. Ransley, N. Xie, D.M. Greaves, Univ of Plymouth; L. Johannig, Univ of Exeter; E. Guerrini, Modular Tide Generators, UK

93. HYDRODYNAMICS XVI: Impact, Hydroelasticity (V. 3)

Wednesday June 19 14:00 Coral 2

Chair: Hao Qin, China Univ of Geosciences, China

Approach to Simulate Dynamic Elasto-Plastic Whipping Response of Global Hull Girder of a Large Container Ship Due to Slamming Load
Yasuhira Yamada, National Inst. of Maritime, Port and Aviation Tech. (MPAT), Japan

A Relationship Between Breaking Wave Characteristics and Slamming Forces Acting on Jacket Structures

Olga Podrażka, Witold Cieslikiewicz, Univ of Gdańsk, Poland; Ove Tobias Gudmestad, Univ of Stavanger, Norway

A Novel Concept in Reducing Wetdeck Slamming Loads – CFD Investigation

Ahmed A Swidan, Univ of New South Wales, Australia

Study on Mechanism of Cutting Hard Soil by High Pressure Water Jet

Jifu Yin, CCCC National Eng. Research Center of Dredging Tech. & Equip., China

Numerical Analysis on Sidewall Green Water Problem of a Ship-shaped FPSO in Bow Quartering Sea

Sung-Chul Hwang, Bo Woo Nam, Yoon-Jin Ha, Kyung-Hwang Kim, Sa Young Hong, Seok-Kyo Cho, Korea Research Inst of Ships & Ocean Eng, Korea

Numerical Study of Wave Impact Loads on Bow Flare of a FPSO by Irregular Waves

Yoon-Jin Ha, Bo Woo Nam, Kyong-Hwan Kim, Sung-Chul Hwang, Sa Young Hong, Korea Research Inst of Ships & Ocean Eng; H J Kim, Samsung Heavy Industries, Korea

94. RENEWABLE ENERGY X:

Offshore Wind 6: Floating Structure 4 (V. 1)

Wednesday June 19 14:00 Coral 4

Chair: Steffen A Shelley, VL Offshore, USA

Numerical Investigation on the Aerodynamic Performance of a Scaled Model Offshore Floating Wind Turbine under Surge Motion

Yuan Fang, Lei Duan, Ye Li, Shanghai Jiao Tong Univ, China

An Improved Time-Frequency Analysis Method Based on the Energy Gridding for Offshore Wind Turbines

Shujian Gao, Ocean Univ of China; Bin Wang, Powerchina Huadong Eng; Fushun Liu, Ocean Univ of China, China

95. SUBSEA, PIPELINES, RISERS VII: Umbilicals 1(V. 2)

Wednesday June 19 14:00 Coral 5

Chair: Hongbin Wang, ExxonMobil UIS, USA

Co-chair: Efsthios Theotokoglou, National Tech Univ of Athens, Greece

Fatigue Flexible Pipe Integrity Assessment Based on Floating Unit Motion Data

Simon Peronne, Paul Sicsic, Julien Tigani, TechnipFMC, France

Stress State of Unbonded Flexible Pipe's Tensile Armour Wires Inside End-Fittings

Efstathios E. Theotokoglou, Panagiotis S. Anastasiadis, National Technical Univ of Athens, Greece; Constantine Michailides, Cyprus Univ of Technology, Cyprus

Vector Form Intrinsic Finite-Element Analysis of Flexible Mining Pipe [Oral presentation]

Han Wu, Xiao-Hui Zeng, Inst of Mechanics, CAS; Yang Yu, Xin Dai, Jianxing Yu, Tianjin Univ, China

Power Cable Design and Dynamic Analysis for a Hybrid Platform

Sung Yoon Boo, VL Offshore; He Yang, Texas A&M Univ, USA

Carbon Fibre Armour for Hyper Deep Water Power Cables – Termination System Development

Anne Berg Thorvaldsen, Torunn Lund Clasen, Nexans Norway AS, Norway

96. HPM X: Additive Manufacturing (V. 4)

Wednesday June 19 14:00 S Pacific 1

Chair: John Barnes, ExxonMobil Technical Computing Co, USA
Co-Chair: R.M. Chandima Ratnayake, Univ of Stavanger, Norway

Material Development Challenges and Advantage of Additive Manufacturing [Oral presentation]
Satyajeet Sharma, Matt Donovan, Kumar Kandasamy, Oerlikon Am, USA

Additive Manufacturing for Oil and Gas – Potential of Topology Optimization for Offshore Applications
John Barnes, Joseph A Camisa, ExxonMobil Technical Computing Company, USA

Application of 3D Printer for Laboratory Soil Tests
Jun Yoneda, National Inst of AIST, Japan

97. COASTAL VIII: Coastal Erosion (V. 3)

Wednesday June 19 14:00 S Pacific 2

Chair: Pasquale G F Filianoti, Univ Mediterranea of Reggio Calabria, Italy
Co-chair: Susumu Araki, Osaka Univ, Japan

Frequency-domain Hydroelastic Analysis of a Two-dimensional Floating Structure in Variable Bathymetry by a Hybrid Technique
Xiaolei Liu, Xuefeng Wang, Shengwen Xu, Xin Li, Lijun Yang, Shanghai Jiao Tong Univ, China

Sediment Grain Size Distribution Behind Detached Breakwater in Bengkalis Island of Indonesia
Basir Noerdin, Tetsuya Hiraishi, Kyoto Univ, Japan

A Study on Wind Driven Current and Nearshore Current at Ishikari-hama Beach
Naoyuki Inukai, Nagaoka Univ of Technology; Keita Shinada, New Civil Engineering, Japan

Characteristics of Beach Erosion in Headland Bays Due to Storm-Waves
Xi Feng, Yingtao Zhou, Yang Lu, Weibing Feng, Hohai Univ, China

98. OCEAN TECHNOLOGY XV: Panel

Wednesday June 19 14:00 S Pacific 3

Chair: Alan Wang, COOEC, China

Panelists

99. ADVANCED SHIP TECH X: Maneuvering (V. 4)

Wednesday June 19 14:00 S Pacific 4

Chair: Yonghwan Kim, Seoul National Univ, Korea

Air Lubrication Sweep Angle Estimation Based on Air Injection Condition Using Model Experimental Image Analysis
Seong-hyeon Park, Seung-Chan Park, Inwon Lee, Pusan National Univ, Korea

Simulation Study on the Maneuverability of Twin-propeller Twin-rudder Bulk Carrier in Large Artificial Waterway
Pengfei Yue, Lizheng Wang, Yan Jin, Wuhan Univ of Technology, China

Path Following of Underactuated Marine Vehicles Based on Model Predictive Control

Zhi-Hua Zeng, Zao-Jian Zou, Zi-Hao Wang, Jian-Qin Wang, Shanghai Jiao Tong Univ, China

Identification of MMG Model for Ship Manoeuvring Motion in 4-DOF Using Least Square Support Vector Machines

Xuegang Wang, CCCC Fourth Harbor Engineering Inst; Zao-Jian Zou, Yan Jiang, Shanghai Jiao Tong Univ, China

Research on Ship Traffic Conflict in Crossing Situation based on Ship Maneuverability

Jinpeng Xie, Zhao Liu, Yanmin Xu, Zheng Chang, Wuhan Univ of Technology, China

An Analysis of the Ventilated Flow on a Rudder

Martina Andrun, Branko Blagojević, Josip Bašić, Zoran Milas, Univ of Split, Croatia

Efficient Coupling of Slender Ship Theory and Modular Maneuvering Model to Estimate the Ship Turning Motion in Waves

Ardhana Wicaksono, Masashi Kashiwagi, Osaka Univ, Japan

Research on the Effect of Wave Added Resistance on Ship's Minimum Propulsion Power

Wei-Min Chen, Shanghai Ship & Shipping Research Inst, China; Yu-chen Shang, Texas A&M Univ, USA; Chuan-qing Li, Shanghai Ship & Shipping Research Inst; Dan Nie, Lei Zhang, Jia-Ning Zhang, Dalian Maritime Univ, China

Predictions of Noise Levels on Board Ships by Hybrid SEA: Application to Ro-Ro Passenger Ship and Self-Propelled Cutter Suction Dredger

Nikola Vladimir, Andro Bakica, Ivica Ančić, Univ of Zagreb, Croatia

100. GEOTECH X: Soil-Pipeline Interactions (V. 2)

Wednesday June 19 14:00 Sea Pearl 2-4

Chair: Dong-Sheng Jeng, Griffith Univ, Australia

Pipe Walking for Onshore Pipelines

Thomas Jurca, TransCanada Corporation; Ken Zhang, Robert M Thom, SES Canada; Canada

Effects of Seabed Shear Strength and Gap between Pipeline and Seabed on Drag Force on Suspended Pipelines Caused by Submarine Debris Flow

Diponkar Saha, Bipul Hawlader, Memorial Univ of Newfoundland; Sujan Dutta, Terraprobe; Ashutosh Dhar, Memorial Univ of Newfoundland, Canada

Shaking Table Tests for Buried Pipe Bends with Thrust Restraints Using Geogrid and Gravel in Liquefied Ground

Yoko Ohta, Yutaka Sawada, Mina Kawamura, Kobe Univ; Kohei Ono, Ehime Univ; Toshinori Kawabata, Kobe Univ, Japan

Influence of Large-diameter Pipe Pile Driving on Adjacent Pipelines Embedded in Marine Sediments

Jinzhong Dou, Jinjian Chen, Chencong Liao, Mingguang Li, Shanghai Jiao Tong Univ, China

101. ARCTIC IV: Ice Management & DP (V. 1)

Wednesday June 19 14:00 Nautilus Ste

Chair: Yury P. Gudoshnikov, Arctic & Anarctic Research Inst. (AARI), Russia

Co-chair: Igor Buzin, Arctic & Anarctic Research Inst. (AARI), Russia

The Influence of Floe Size and Ice Concentration on the Operating Envelopes of an FPSO in Pack Ice

Mohamed Sayed, David Watson, Shameen Islam, National Research Council of Canada; Brian Wright, B Wright & Associates, Canada

Outlet Glaciers as Iceberg Factories: Case Study for the Kara Sea

Petr A. Tarasov, Konstantin A. Kornishin, Rosneft Oil Co; Ivan I. Lavrentiev, Inst of Geography, RAS; Teymur E Mamedov, Arctic Research Centre; Andrey F Glazovsky, Inst of Geography, RAS; Evgeny S Bagorian, Yaroslav O Efimov, Arctic Research Centre; Igor V. Buzin, Arctic and Antarctic Research Inst; Pavel A. Salman, ES-PAS, LLC, Russia

Icebergs Towing Experiments in the Barents and Kara Seas in 2016-2017

Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav Efimov, Arctic Research Centre; Yury P. Gudoshnikov, Arctic and Antarctic Research Inst; Petr A. Tarasov, Rosneft Oil Co; Alexey V. Chernov, Ivan A. Svistunov, Polina V. Maksimova, Igor V. Buzin, Alexander V. Nesterov, Arctic and Antarctic Research Center, Russia

Iceberg Towing in Newly Formed Ice

Yaroslav O. Efimov, Arctic Research Centre; Konstantin A. Kornishin, Oleg Ya. Sochnev, Rosneft Oil Co; Yury P. Gudoshnikov, Alexander V. Nesterov, Ivan A. Svistunov, Polina V. Maksimova, Igor V. Buzin, Arctic and Antarctic Research Inst, Russia

WEDNESDAY 16:20

102. HYDRODYNAMICS XI: CFD 3 Ship Hydrodynamics (V. 3)

Wednesday June 19 16:20 Coral 1

Chair: Jin Kim, KRISO, Korea

Geometric Modeling and Mesh Generation by Radial Basis Functions and their Application to Ship Flow Simulations

Lin Ma, Tingqiu Li, Zuyuan Liu, Jiangyan Shao, Hao Wu, Wuhan Univ of Technology, China; William Geraint Price, Pandeli Temarel, Dominic Hudson, Univ of Southampton, UK

Simulation of Roll Performance for Various Ship Sections by Solving Navier-Stokes Equations

Xiaohui Zhang, Xiechong Gu, Ning Ma, Shanghai Jiao Tong Univ, China

CFD Study of Coupled Heave-Roll Motion Effect on Flooding Process of a Cruise Ship

Xiaoting An, Shanghai Jiao Tong Univ; Gaoshuai Wang, Yue Ding, Shanghai Waigaoqiao Shipbuilding, Decheng Wan, Shanghai Jiao Tong Univ, China

Benchmark Computations on Motion Responses and Bow Waves of the Ship in Regular Waves

Hao Guo, Jianhua Wang, Decheng Wan, Shanghai Jiao Tong Univ, China; Changhong Hu, Kyushu Univ, Japan

A Numerical Investigation on Hydrodynamic Performances of a Container Ship in Cross Flows

Lu Zou, Zaojian Zou, Shanghai Jiao Tong Univ; Yi Liu, Marine Design and Research Inst; Hai-peng Guo, Shanghai Jiao Tong Univ, China

Study on the Seakeeping of the Wave-absorbing Double M-craft in Waves Based on CFD

Xiaofei Mao, Liang Yan, Wuhan Univ of Technology; Xiaohong Shen, China Ship Research & Design Centre; Zeshuang Yu, China Classification Society, China

Computational Fluid Dynamics Study on KRISO Container Ship Maneuvering in Calm Water

Seemontini RoyChoudhury, Osaka Univ, Japan; Ping-Chen Wu, National Cheng Kung Univ, Taiwan, China; Yugo Sanada, Univ of Iowa, USA; Yasuyuki Toda, Osaka Univ, Japan

103. HYDRODYNAMICS XVII: Dynamic Positioning 1 (V. 3)
Wednesday June 19 16:20 Coral 2

Chair: Shengwen Xu, Shanghai Jiao Tong Univ, China

Mitigating Roll-Pitch Motion by an Adaptive Fuzzy Damping Controller in Dynamic Positioning System

Huacheng He, Lei Wang, Shengwen Xu, Bo Li, Shanghai Jiao Tong Univ; Jian Zhang, Jiangsu Univ of Science and Technology, China

Drift-off Safety Limits of Dynamic Positioned FPSO on the Next GenSPS

Yue Han, Xingwei Zhen, Yi Huang, Dalian Univ of Technology, China

State Estimation of Dynamic Positioning Using a Model Predictive Extended Kalman Filter

Fan Jiang, Haixiang Xu, Wenzhao Yu, Hui Feng, Wuhan Univ of Technology, China

Robust Dynamic Positioning Control of Marine Ships via a Disturbance Observer

Chenfeng Huang, Xianku Zhang, Yingjie Deng, Guoqing Zhang, Dalian Maritime Univ, China

Research on Dynamic Positioning Thrust Allocation Switching Strategy

Mengfei Zhu, Haixiang Xu, Wenzhao Yu, Hui Feng, Wuhan Univ of Technology, China

104. RENEWABLE ENERGY XI: Offshore Wind 7: Management 1 (V. 1)
Wednesday June 19 16:20 Coral 4

Chair: Erik Friis-Madsen, Wave Dragon; Denmark

Operational Modal Analysis of a Multi-Rotor Wind Turbine

Oliver Tierdad Filsoof, Aarhus Univ; Anders Yde, Vestas Wind Systems; Xuping Zhang, Aarhus Univ, Denmark

Study on the Influence of Uniform and Dynamic Winds on Coupled Dynamic Response of 5-MW Semi-Submersible FOWT

Xinkuan Yan, Chaohe Chen, Yong Jiang, Yuan Ma, Yijun Shen, Ziqian Fan, Tianhui Fan, South China Univ of Technology, China

Large Eddy Simulation of Wake Characteristics of a Yawed Wind Turbine in Uniform Inflow Conditions Using an Actuator Curve Embedding Approach

Lin Yang, Harbin Engineering Univ, China; Qing-Wei Ma, City, Univ of London, UK; Kangping Liao, Hongde Qin, Harbin Engineering Univ, China

CFD Analysis for A Set of Axial Fan Array to Produce Inflow for Wind Turbine Model Test

Long Yu, Ying Chen, Shanghai Jiao Tong Univ, China

Numerical Study of Wake Interaction and its Effect on Wind Turbine Aerodynamics Based on Actuator Line Model

Xu Ning, Yang Huang, Decheng Wan, Shanghai Jiao Tong Univ, China; Changhong Hu, Kyushu Univ, Japan

105. SUBSEA, PIPELINES, RISERS VIII: Umbilicals 2 (V. 2)
Wednesday June 19 16:20 Coral 5

Chair : Mason Wu, Trafigura Trading LLC, TX, USA

Small-Scale Testing and Mathematical Modeling of Cable Elements' Shear Forces due to Dry Friction and Bitumen

Magnus Komperød, Bjørn Kondradsen, Bjørn Aspli, Nexans Norway AS, Norway

Investigation of Dynamic Wet Design XLPE Cable after 12 Years in Operation

Elise Olsen, Randi Floden, Torunn Lund Clasen, Nexans Norway AS, Norway

Evaluation of Accuracy and Precision for Derived Axial Stiffness for Cables and Umbilicals from Full-Scale Testing [Proceedings only]

Roger Slora, Bjørn Konradsen, Magnus Komperød, Nexans Norway AS, Norway

Small- and Full-Scale Fatigue Testing of Lead Cable Sheathing [Proceedings only]

Audun Johanson, Nexans Norway AS, Luigi Mario Viespoli, NTNU; Antonio Alvaro, SINTEF Industry; Filippo Berto, NTNU, Norway

106. HPM XI: EAC I: Hydrogen Embrittlement - Fundamentals, Modeling 1 (V. 4)

Wednesday June 19 16:20 S Pacific 1

Chair: Hyun Jo Jun, ExxonMobil Research & Engineering, USA

Co-Chair: Eiji Akiyama, Tohoku Univ, Japan

Hydrogen Embrittlement of High Strength Steels Assisted by Corrosive Environment [Oral presentation]

Eiji Akiyama, Tohoku Univ, Japan

Effect of Mn Content on Hydrogen Embrittlement of High-Mn Steel at Low Temperature [Oral presentation]

Jang Woong Jo, Hyun Soo Seo, Chong Soo Lee, Pohang Univ of Sci & Tech, Korea

The Role of VC Precipitates in Hydrogen Assisted Cracking of Vanadium Modified 2¼Cr1Mo Steel

Kevin A Nibur, Hy-Performance Materials Testing; Brian Somerday, Southwest Research Inst, USA; Sylvain Pillot, ArcelorMittal, France; Richard Gangloff, Univ of Virginia, USA

An Experimental Study on Environmental Assisted Cracking of Structural Steel in 3.5 wt% NaCl Solution

Nirosha D Adasooriya, Tor H Hemmingsen, Dimitrios Pavlov, Univ of Stavanger, Norway

Effects of Hydrogen and Surface Cracks on Tensile Properties of Torsional Prestrained Carbon Steel

Hiroshi Nishiguchi, Takayuki Fukuda, Masato Ino, Kenji Higashida, Sasebo College, Japan

A Comparison of Inhibitory Effects of Carbon Monoxide and Oxygen on Hydrogen-Accelerated Fatigue Crack Growth

Ryosuke Komoda, Fukuoka Univ; Kazuki Yamada, Masanobu Kubota, Kyushu Univ, Japan

107. COASTAL IX: Coastal Management (V. 3)

Wednesday June 19 16:20 S Pacific 2

Chair: Yoshimichi Yamamoto, Tokai Univ, Japan

Risk Assessment Study in the Port Water Area Based on Entropy Weight and Matter-Element Model

Congcong Zhou, Quandang Ma, Yujie Jiang, Wuhan Univ of Technology, China

Innovative Strategies, Monitoring and Analysis of the Coastal Erosion Risk: The STIMARE Project

Renata Archetti et al, Univ of Bologna, Italy

108. OMGH I - Gas Hydrates 1 (V. 1)

Wednesday June 19 14:20 S Pacific 3

Chair: Yonghai Gao, China Univ of Petroleum (East China), China

Numerical Simulation of Evaporation of a Stationary Methane Droplet
Jiajia Deng, Jian Xu, Jinshu Lu, Zhejiang Ocean Univ, China

Experimental Investigation of Methane Hydrate Reformation with Under-inhibition of MEG
Jakyung Kim, KAIST; Hyunho Kim, Yutaek Seo, Seoul National Univ, Korea

A Study on Gas-Liquid Two Phase Flow in Methane Hydrate Production System
Satoshi Hirobayashi, Tokai Univ; Fumio Kiyono, Hiromitsu Morita, AIST; Yoshiyuki Shimizu, Tokai Univ, Japan

A Study on Optimization Measures for Offshore Oil&Gas Field Development under Low Oil Price Situation
Hualei Yi, Yi Hong, Zhigang Li, Chunsheng Wang, CNOOC Research Inst, China

Dynamic Mechanical Properties of Tetrahydrofuran Hydrate-bearing Silty Sediments
Fangfang Sun, Shuyun Wang, Xuhui Zhang, Xiaobing Lu, Inst of Mechanics, CAS, China

The Suitable Strength Criterion to Determine the Collapse of Hydrate Reservoirs with Different Saturation
Yuan Chen, Ting Sun, China Univ of Petroleum (Beijing), China; Yida Zhang, Univ of Colorado-Boulder, USA; Ximo Qu, China Univ of Petroleum (Beijing); Haidong Shi, PetroChina Research Inst of Petroleum Exploration & Development; Hao Ying, Arup, USA

109. ADVANCED SHIP TECH XI: Design & Production (V. 4)

Wednesday June 19 16:20 S Pacific 4

Chair: Gianmarco Vergassola, Univ of Genoa, Italy

Research on Habitability Evaluation of Ocean Exploration Vessel Accommodations Based on FAHP
Hongtao Yuan, Yan Yin, Chunhui Li, Bo Zhou, Haiwen Zhang, Yan Yang, Shanghai Waigaoqiao Shipbuilding, China

Multi-objective Reliability-Based Design Optimization of an Autonomous Sailing Vessel
Julian Fraize, Fanny Ekman, Mirjam Fürth, Steven Hoffenson, Brian Chell, Stevens Inst of Technology, USA

Recognition and Location of Ship Small Assemblies Stiffeners for Automatic Manufacturing Based on Machine Vision
Jinhong Ding, Chongben Ni, Shanghai Jiao Tong Univ; Dewu You, Shipbuilding Technology Research Inst, China

Study on Technology of Skidded Loadout of SPAR Hull
Yuhan Wang, Hongtao Yuan, Gang Chen, Chunhui Li, Shugang Ma, Xingfeng Zheng, Shanghai Waigaoqiao Shipbuilding, China

Study on the Multi-area Concurrent Construction of Drillship
Bo Zhou, Jianwei Chen, Xuehui Zhang, Shugang Ma, Yan Yin, Yan Wen, Shanghai Waigaoqiao Shipbuilding, China

Fatigue Life Improvement Method and Allowable Defect Criteria for Repair Welds of Marine Propeller Blade
Hyeon Su Kim, Dong-Wook Kim, Dong-Hyun Moon, Tae-Jong Park, Dong-Ju Lee, Hyundai Heavy Industries, Korea

110. GEOTECH XI: Ground Improvement (V. 2)

Wednesday June 19 16:20 Sea Pearl 2-4

Chair: Young-sang Kim, Chonnam National Univ, Korea

Co-chair: Yun Wook Choo, Kongju National Univ, Korea

Development of New Chemical Grouting Method with High Injection Efficiency and Quality

Yasutoshi Ohno, Takayoshi Ito, Tatsuhiro Mizushima, Yukimasa Kato, Taiyo Foundation; Kenji Shimosaka, Mitsuhiro Akatsuka, TODA Corp; Atsushi Yashima, Yoshinobu Murata, Keizo Kariya, Yuki Hanada, Gifu Univ, Japan

Study on Fluidity and Mechanical Characteristic of Fiber Reinforced Cement Milk

Masahide Niina, Ken Watanabe, Mamoru Fuji, Daisuke Kajiwara, Tokai Univ; Mitsuru Kodera, Nippon Concrete Industries, Japan

Strength Monitoring of Dredged Marine Clay Stabilized with basic Oxygen Furnace Steel Slag Using Non-destructive Method

Gyeong-o Kang, Young-sang Kim, Thien Quoc Tran, Nguyen Anh Dan, Chonnam National Univ, Korea

Engineering Performance Review of Matrix/Binder Conjugated Nonwoven Geotextiles for Weak Ground Improvement

Han-Yong Jeon, Inha Univ, Korea

Behaviour Analysis of Reinforced Soil Retaining Wall According to Convex Angle

Dong-Wook Oh, Soon-Kyo Hong, Seoul National Univ of Sci & Tech; Hyuk-Sang Jung, Young-Je Kim, Dongyang Univ; Yong-Joo Lee, Seoul National Univ of Sci & Tech, Korea

Effects of Fine Contents on the Fracture Behavior of Frozen Sands

Bumsik Hwang, Dankook Univ; Youngseok Kim, Korea Inst of Civil Eng & Building Tech; Seong-Yeol Park, Wanjei Cho, Dankook Univ, Korea

111. ARCTIC V: Ice Navigation (V. 1)

Wednesday June 19 16:20 Nautilus Ste

Chair: Mohamed Sayed, National Research Council, Canada

Experimental Investigations on Snow Cover Effect on the Navigating Resistance of an Icebreaker

Siyang Huang, Yan Huang, Jianqiao Sun, Tianjin Univ, China

Numerical Analysis of Air Cavity Propagation in Hovercraft

Lei Ju, Ziheng Su, Qing Wang, Zhou Yang, Harbin Engineering Univ, China

Investigations on the Dynamic Characteristics of Ship-ice Impact Load Through Model Tests

Jianqiao Sun, Yan Huang, Siyang Huang, Tianjin Univ, China

Study on Estimation of Ice Resistance and an Attainable Speed in Oblique Condition

Hyun-Soo Kim, Inha Technical College; Erinc Ozden, Inha Univ, Korea

Investigations on the Level Ice Resistance of Ships with Conventional Bow Shapes

Quentin Hisette, Daniela Myland, Hamburg Ship Model Basin; Franciska Müller, Hamburg Univ of Technology; Mikko Suominen, Hamburg Ship Model Basin, Germany

19:00	Coral, 6F
The 29th Annual Conference Banquet Cultural Event, ISOPE Best Paper, Best Student Paper, Outstanding Student Scholarships, Best Organizer(s) and ISOPE Awards <i>Don't forget the banquet ticket.</i>	

THURSDAY 08:00

112. HYDRODYNAMICS XII: CFD 4 Hydrodynamics 2 (V. 3)
Thursday June 20 08:00 Coral 1

Chair: Shiqiang Yan, City, Univ of London, UK

Simulation of Wave Breaking in Deep Water with a Non-Hydrostatic Shock-Capturing Model

Dongbin He, Yuxiang Ma, Guohai Dong, Kezhao Fang, Dalian Univ of Technology, China

Modeling Wave Attenuation by Plants under Combined Wave-current Interaction in SWAN

Hong Wang, Juanling Zhou, Yulong Li, Zhan Hu, Sun Yat-Sen Univ, China

Numerical Simulation of Motion of Rectangular Body in Rogue Waves Using Open Source Libraries

Wooyoung Jeon, Sunho Park, Korea Maritime and Ocean Univ, Korea

Numerical Simulation of Typhoon Wave of Taitung Zhiben Coast in Taiwan

Chen-Shan Kung, Pei-Yu Lee, Pin-Tzu Su, Jia-Wei Huang, ATE Energy International, Taiwan, China

A New Scheme of Thermal Properties for VOF Method in Heat Transfer Problems

Panpan Han, Ke Chen, Yunxiang You, Xinshu Zhang, Shanghai Jiao Tong Univ, China

A Multiphase SPH Model for Large Scale Bubble Dynamics in Ocean Engineering Applications

Xiangli Fang, Pingping Wang, Furen Ming, Harbin Engineering Univ, China; Pengnan Sun, Ecole Centrale de Nantes, France; A-Man Zhang, Harbin Engineering Univ, China

113. HYDRODYNAMICS XVIII: Dynamic Positioning 2 (V. 3)
Thursday June 20 08:00 Coral 2

Chair: Alan M Wang, Offshore Oil Engineering, China

Virtual Reality Simulations for Dynamic Positioning Floatover Installation

Alan M Wang, Rongqi Chen, Min He, Xiaohuan Zu, Jingkuo Xu, Offshore Oil Engineering, China; Wim van't Padje, STC BV, Netherlands

Adaptive PD for Dynamic Positioning System Based on DDPG

Daesoo Lee, Seung Jae Lee, Korea Maritime and Ocean Univ, Korea

Initial Design of Autonomous Controller for Stationkeeping System using Flapping Foils in Combined Ocean Environments

Woolim Sim, Rupesh Kumar, Hyunkyoung Shin, Univ of Ulsan, Korea

Influence of Mooring Components on the Wave Structure Interaction of a Moored Floating Body

Jannik Meyer, Arndt Hilderbrandt, Univ of Hannover, Germany

Study of Drag Force Acting on Various Types of DP Jack-up Vessel Legs

Nitin Damodhar Thulkar, Satoru Yamaguchi, Koki Ebihara, Kyushu Univ, Japan

114. RENEWABLE ENERGY XII: Offshore Wind 8: Management 2
(V. 1)

Thursday June 20 08:00 Coral 4

Chair: Shuichi Nagata, Saga Univ, Japan

Data-Driven Design and Operation of Offshore Wind Structures

Dawid Augustyn, Ulf T Tygesen, Ramboll; Martin D Ulriksen, John D Sørensen, Aalborg Univ, Denmark

An Integrated Asset Management Model for Offshore Wind Turbines

Jerome Lonchampt, EDF R&D, France; Antoine Joly, Tariq Dawood, Alexios Koltsidopoulos Papatzimos, EDF Energy R&D UK Center, UK

Simulation-Based Economic Evaluation of the Operational Phase of Offshore Wind Turbines

Stephan Oelker, Univ of Bremen; Abderrahim Ait Alla, BIBA; Marco Lewandowski, Univ of Bremen; Melanie Löffler, BIBA; Michael Freitag, Univ of Bremen, Germany

Study on the Application Framework of BIM in the Life Cycle Management of Offshore Wind Farms

Jing Jia, Shengyu Dou, Shutong Yang, Yajie Wu, Feifei Cao, Bei Li, Han Cui, Ocean Univ of China, China

Dynamic Measurements of a 1:25 Scale Floating Wind Turbine [Oral presentation]

Antonie Oosterkamp, Sigmund Clausen, NORCE, Norway

Structural Vibration Monitoring and Analysis of Offshore Wind Turbine in Taiwan

Kung-Chun Lu, James Chang, National Center for Research on Earthquake Engineering; Yu-Shu Kuo, Wei-Chen Tseng, National Cheng Kung Univ; Hung-Tao Lee, Swancor Renewable Energy Co. Ltd; Zron Wang, Hao Chang, System Access Co, Taiwan, China

115. SUBSEA, PIPELINES, RISERS IX: Multiphase Flow (V. 2)

Thursday June 20 08:00 Coral 5

Chair: Ljiljana D. Oosterkamp, Equinor ASA, Norway

Co-chair: A-Man Zhang, Harbin Engineering Univ, China

Influence of Specific Surface Area and Morphology of Nanocomposite Pour Point Depressant on the Modification of Waxy Oil

Zheng Peng, Wei Wang, Huirong Huang, Siyuan Yang, Jing Gong, China Univ of Petroleum (Beijing), China

Experimental Investigation of Severe Slugging in Vertical Riser and Its Mitigation with Inlet Choke Control

Ki Heum Park, Young Hoon Sohn, Wonjin Jang, Yutaek Seo, Seoul National Univ, Korea

Water Hammer in Multiphase Subsea Pipeline with Low Gas-Liquid Ratio

Hong Lu, CNOOC Research Inst, China

Modelling of Liquid-Solid Flow in Horizontal Pipe Applying Computational Fluid Dynamics Method

Sihang Chen, Jie Zhang, Bingyuan Hong, Xu Duan, China Univ of Petroleum (Beijing); Shilin Chen, CNOOC; Jing Gong, China Univ of Petroleum (Beijing), China

Numerical Simulation of Flow Field of a Combined Jetting Pig in Subsea Natural Gas Pipeline

Hang Zhang, Can Cui, Na Lu, Qianyue Zheng, China Univ of Petroleum-Beijing, China

An Experimental Investigation of In-Situ Water Cut Distribution for Oil-water Two Phase Horizontal

Hai-Yuan Yao, Qing-Ping Li, Bing Chen, CNOOC Research Inst; Jing Gong, China Univ of Petroleum-Beijing, China

Critical Free Spans in the Exclusion Zone of Offshore Installations, Risk and Correction

Ljiljana Oosterkamp, Equinor ASA / Univ of Stavanger, Norway; Andrea Baldoni, Alberto Batistini, Saipem, Italy

116. HPM XII: EAC II: Hydrogen Embrittlement- Fundamentals, Modeling 2 (V. 4)

Thursday June 20 08:00 S Pacific 1

Chair: Brian Somerday, Southwest Research Inst, USA

Co-Chair: Ramgopal Thodla, DNV GL, USA

Atomistic Modelling for Intergranular and Quasi-cleavage Fracture Caused by Hydrogen Embrittlement

Nobuyuki Ishikawa, Kazuki Matsubara, JFE Steel, Japan; Liang Wan, Wuhan Univ, China; Wen-Tong Geng, Shigenobu Ogata, Osaka Univ, Japan

Towards Molecular Dynamics Simulations of Hydrogen Effects in Fe-Ni-Cr Stainless Steels

Xiao W Zhou, Michael E Foster, Ryan B Sills, Richard A Karmesky, Sandia National Laboratories, USA

Modelling of a Crack-induced Hydride Formation near a Phase Boundary in Metals

Claudio F Nigro, Christina Bjerkén, Yiva Mellbin, Malmö Univ, Sweden

Two Dimensional Visualization of Hydrogen Permeated through a Stainless Steel Membrane

Akiko Itakura, National Inst for Materials Science; Satoka Aoyagi, Seikei Univ; Yoshiharu Murase, Taro Yakabe, National Inst for Materials Science; Shoji Takagi, Toho Univ; Tomoya Iwasawa, Univ of Tsukuba; Naoya Miyauchi, National Inst for Materials Science, Japan

4D Characterization of the Stress Corrosion Cracking Behavior in Al-10Mg Aluminum Alloy via Synchrotron X-ray Tomography

Dongsheng Fu, Hiroyuki Toda, Hang Su, Kyosuke Hirayama, Kyushu Univ; Kentaro Uesugi, Akihisa Takeuchi, Japan Synchrotron Radiation Research Inst, Japan

117. OMGH II: Gas Hydrates 2 (V. 1)

Thursday June 20 08:00 S Pacific 2

Chair: Satoshi Hirobayashi, Tokai Univ, Japan

Co-chair: Yutaek Seo, Seoul National Univ, Korea

Development of Analysis and Transfer System of Seafloor Natural Gas Hydrate Pressure Core

Qiaoling Gao, Peihao Zhang, Hai Zhu, Ziqiang Ren, Xiaoling Le, Jiawang Chen, Zhejiang Univ, China

Trajectory Optimization for Gas Hydrate Well in Deepwater: Wellbore Stability and Sand Control

Yue Gu, Deli Gao, Jin Yang, China Univ of Petroleum (Beijing), China

Application Verification of Natural Gas Hydrate Micro-experimental Study

Ye Chen, Yonghai Gao, Guizhen Xin, Dongzhi Gao, Litao Chen, Baojiang Sun, China Univ of Petroleum (East China), China

An Acoustic Approach to Identify the Shallow Gas and Evaluate the Drilling Risk in Deep Water Based on Simulation Experiments Study
Huanhuan Wang, Jin Yang, Lei Li, Jiajun Xu, Lingyu Meng, Jiayao Hong, Qiuxuan Zhao, Maailun Wang, China Univ. of Petroleum (Beijing), China

Effects of Permeability on Spatial Distribution of Hydrate Saturation and Gas Production Performance During Hydrate Dissociation by Depressurization around Quadruple Point
Didi Wu, Shuxia Li, China Univ of Petroleum (East China), China

118. MECHANICS, COLLISION, RELIABILITY I: Hydroelasticity
(V. 4)

Thursday June 20 08:00 S Pacific 3

Chair: Ling Wan, Newcastle Univ, Singapore

Co-Chair: B-F Peng, J Ray McDermott, USA

3D Hydorelastic Study of a Trapezoidal Large Floating Structure
Guo-wei Zhang, Wei-qin Liu, Wei-guo Wu, Song-bo Wang, Wuhan Univ of Technology, China

Hydroelastic Response of VLFS with an Attached Submerged Horizontal Porous Plate

Mingwei Feng, Zhaochen Sun, Shuxiu Liang, Dalian Univ of Technology, China

Numerical Study of Wave Slamming Forces on Panels in the Splash Zone Based on ALE Method

Yang Du, China Univ of Petroleum (Beijing); GuoHeng Liu, CNOOC Research Inst; Menglan Duan, Yingying Wang, China Univ of Petroleum (Beijing), China

Introduction of an Autonomous Collision Avoidance Function on a Ship Handling Simulator

Eiko Saito, Yasuyuki Niwa, Junji Fukuto, Kenjiro Hikida, National Maritime Research Inst, Japan

119. ADVANCED SHIP TECH XII: Squat, Operation (V. 4)

Thursday June 20 08:00 S Pacific 4

Chair: Yucheng Wang, China Ship Dev & Design Center, China

Co-Chair: Jin Kim, KRISO, Korea

Analysis of Impact of Environmental Wind on Motion Characteristics of Hovercraft

Chuanxu Yan, Song Gao, Marine Design & Research Inst of China; Yiqun Huo, Shanghai Zhongchuan Nerc-sdt Co., LTD, China

Numerical Calculation and Simulation Study of Squat on Very Large Ship

Xin Yang, Jingxian Liu, Huanhuan Li, Weihuang Wu, Guangxu Gao, Wuhan Univ of Technology, China

Study on the Squat Characteristics of Very Large Tanker and Container Ship in Shallow Water

Sangmin Lee, Kunsan National Univ; Bokyeong Lee, Korea Maritime and Ocean Univ, Korea

120. GEOTECH XII: Panel

Thursday June 20 08:00 Sea Pearl 2-4

Chair: Yun Wook Choo, Kongju National Univ, Korea

Co-Chair: Chun Fai Leung, National Univ of Singapore, Singapore

Panelists

121. ARCTIC VI: Ice Loads (V. 1)

Thursday June 20 08:00 Nautilus Ste

Chair: Quentin Hisette, Hamburg Ship Model Basin, Germany

Instrumental Real-time Monitoring and Prediction of Sea Ice Compression and Ridging

Victor N. Smirnov, Sergey M. Kovalev, Maxim S. Znamensky, Nikolay V. Kolabutin, Arctic and Antarctic Research Inst; Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav O. Efimov, Arctic Research Centre; Vladimir A. Pavlov, Rosneft Oil Co, Russia

Evaluation of Ice Loads on Offshore Structure Using GPU-Event-Mechanics

Hyunwook Kim, Agency for Defense Development, Korea; Claude Daley, Memorial Univ of Newfoundland, Canada

Local Ice Loads on Sloped Structures: Interplay between Ice Compressive and Flexural Failure [Oral presentation]

Rocky S Taylor, Ridwan Hossain, Memorial Univ of Newfoundland; Thomas Browne, Martin Richard, National Research Council Canada, Canada

Ice-induced Fatigue of Ocean Engineering Structures under Climate Change Scenarios

Yuxian Ma, Ning Xu, Xue Chen, National Marine Environmental Monitoring Center; Dayong Zhang, Dalian Univ of Technology; Shuai Yuan, Xueqin Liu, Wenqi Shi, National Marine Environmental Monitoring Center; Wei Li, Tianjin Univ, China

Large-scale Ice Crushing Experiments with Icebreaker

Victor N. Smirnov, Sergey M. Kovalev, Alexey V. Chernov, Alexey A. Nubom, Nikolay V. Kolabutin, Egor V. Shimanchuk, Arctic and Antarctic Research Inst; Konstantin A. Kornishin, Rosneft Oil Co; Yaroslav O. Efimov, Arctic Research Centre; Petr A. Tarasov, Rosneft Oil Co, Russia

Nonlinear Finite Element Analysis of Inland-Waterway Barge in Fresh Water Ice Conditions

Harsha Cheemakurthy, Meng Zhang, Karl Garne, Zuheir Barsoum, KTH Royal Inst of Technology, Sweden

THURSDAY 10:30

122. HYDRODYNAMICS XIII: CCP-WSI Blind Tests 1(V. 1)

Thursday June 20 10:30 Coral 1

Chair: Scott Andrew Brown, Univ of Plymouth, UK

Co-Chair: Shiqiang Yan, City, Univ of London, UK

Numerical Investigation of Focused Wave Impacts on Floating Wave Energy Convertors Using OpenFOAM

Scott Andrew Brown, Edward Jack Ransley, Pierre-Henri Musiedlak, Deborah Greaves, Univ of Plymouth, UK

Contribution to the CCP-WSI Blind Test Series 3: Analysis of Scaling Effects of Moored Point-Absorber WEC in a CFD-based Numerical Wave Tank

Christian Windt, John V. Ringwood, Maynooth Univ, Ireland; Josh Davidson, Budapest Univ, Hungary; Pal Schmitt, Queen's Univ Belfast, Northern Ireland

A 3-D Hybrid Model Coupling SPH and QALE-FEM for Simulating Nonlinear Water Wave Interaction with Floating Structure

Ningbo Zhang, Harbin Engineering Univ, China; Shiqiang Yan, City, Univ of London, UK; Xing Zheng, Harbin Engineering Univ, China; Qingwei Ma, City, Univ of London, UK

An Improved Passive Wave Absorption Technique for FNPT-NS Solver
Junxian Wang, Jinghua Wang, Shiqiang Yan, Qingwei Ma, City, Univ of London, UK; Guihua Xia, Harbin Eng Univ, China

CCP-WSI Blind Test Series 3: A Nonlinear Froude-Krylov Modelling Approach
Giuseppe Giorgi, Politecnico di Torino, Italy

123. HYDRODYNAMICS XIX: Floating Tunnel, Bridge 1 (V. 1)
Thursday June 20 10:30 Coral 2

Chair: Moo Hyun Kim, Texas A&M Univ, TX, USA
Co-Chair: H. G. Kwak, KAIST, Korea

Tunnel-Mooring-Line-Vehicle Coupled Time-Domain Dynamic Analysis for a Submerged Floating Tunnel in Wave and Seismic Conditions
Chungkuk Jin, Moo-Hyun Kim, Texas A&M Univ, USA

Numerical Study on Behavior of Ground Surrounding Interface between SFT and Subsea Bored Tunnel
Seok-Jun Kang, Jung-Tae Kim, Jun-Beom An, Gye-Chun Cho, Korea Advanced Inst of Sci & Tech, Korea

Optimization of Wave Induced Motions and Forces on a Floating Island
W.J. Otto, O.J. Waals, T. H. J. Bunnik, J. Cresp, MARIN, Netherlands

Structural Displacement Estimation by FIR Filter Based Fusion of Strain and Acceleration Measurements
Zhanxiong Ma, Hoon Sohn, Korea Advanced Inst of Sci. & Tech, Korea

Evaluation of Response Amplitude Operator for Scaled Model of Floating Bridge
Minwoo Chang, Korean Railroad Research Inst; Gulgi Choi, Taesung S&E; Phill-Seung Lee, KAIST; Sung Il Seo, Hyung Suk Mun, Korean Railroad Research Inst, Korea

124. RENEWABLE ENERGY XIII: Tidal & Current Energy (V. 1)
Thursday June 20 10:30 Coral 4

Chair: Woo Sun Park, Korea Institute of Ocean Technology, Korea
Co-Chair: Sa Young Hong, KRISO, Korea

Numerical Simulation of Tidal Stream Turbines Using Actuator Line Method
Xiangfeng Lin, Jisheng Zhang, Jing Zhang, Hohai Univ; Tiantian Zhang, China Three Gorges Corp, China

Test Study on Hydrodynamic Characteristics of Floating Tidal Current Power Stations
Guoqiang Li, Wei Wang, Yonghe Xie, Jiping Zhang, Zhejiang Ocean Univ; Xin Lu, CSSC Huangpu Wenchong Shipbuilding, China

GEMSTAR: A Tethered System for Tapping Tidal Currents Energy
Domenico P Coiro, Univ of Naples Federico II; Giancarlo Troise, Nadia Bizzarrini, Seapower Srl; Guido Lazzarini, Univ of Naples Federico II, Italy

Ultimate Strength Evaluation of Kuroshio Current Turbine Blades
Chi-Fang Lee, Chien-Ting Sun, CR Classification Society; Ching-Yeh Hsin, National Taiwan Ocean Univ; Ya-Jung Lee, CR Classification Society; Forng-Chen Chiu, National Taiwan Univ; Tsung-Yueh Lin, CR Classification Society, Taiwan, China

125. SUBSEA, PIPELINES, RISERS X: Subsea Installation (V. 2)
Thursday June 20 10:30 Coral 5

Chair: Mason Wu, Triguera Trading LLC, TX, USA

Co-Chair: Arya Majed, IntecSea Inc., TX, USA

Lined Pipe Reeling Mechanics Design of Experiment & Machine Learning Model

Chen Shen, Baptiste Fournier, Eric Giry, Vincent Cocault-Duverger, SAIPEM S.A., France

Prediction of Subsea Pipeline Out of Straightness by Machine Learning to Optimize Lateral Buckling Mitigations

Amandine Laye, Alexis Marchesi, Vincent Cocault-Duverger, SAIPEM SA, France

Non-uniform Contact Force Analysis of Rollers on the Deepwater Pipe-Laying Ship Stinger

Xiaobo Wang, Wentai Yu, China Offshore Oil Engineering; Hongsheng Yan, Heng Yuan, Tianjin Univ, China

Numerical Calculation of Water Resistance of Immersed Tube Element in Towage

Weiqing Lyu, Zong-quan Ying, Xue-gang Wang, CCCC Fourth Harbor Engineering; Hai-peng Guo, Shanghai Jiao Tong Univ, China

Research on Stress Characteristics in Pouring Deep-buried Superwide Steel Immersed Tube Tunnels with Big Siltation

Shenyou Song, Shen-Zhong Link Admin Center; Meimei Liu, Pingjie Li, CCCC Fourth Harbor Engineering, China

126. HPM XIII: EAC III: Carbon Steel; Sour Performance 1 (V. 4)
Thursday June 20 10:30 S Pacific 1

Chair: Thirumalai Neeraj, ExxonMobil Research & Engineering, USA

Co-Chair: Hyun Jo Jun, ExxonMobil Research & Engineering, USA

Material Design of Sour Resistant Line Pipe for Mild Sour Environments

Takuya Hara, Yasuhiro Shinohara, Nobuaki Takahashi, Taro Muraki, Nippon Steel & Sumitomo Metal, Japan

Material Design for Grade X65 UOE Sour Linepipe Steels with SSC Resistant Property

Junji Shimamura, Daichi Izumi, Satoshi Igi, Nobuyuki Ishikawa, Satoshi Ueoka, Koichi Ihara, Joe Kondo, JFE Steel, Japan

Developments of Heavy Gauge Linepipe Steel Plate for Sour Service [Oral presentation]

Donghoon Kang, Heewoong Lee, Minho Park, Kyutae Kim, Hyundai Steel, Korea

Large OD Seamless Line Pipes for Low Temperature and Sour Service Applications

Alessandro Paggi, Emanuele Paravicini Bagliani, Philippe Darcis, Dalmine S.p.A., Italy

Hydrogen Permeation, Absorption and Trapping in Carbon Steels – A Comparison of Line Pipe and OCTG Steels

Thirumalai Neeraj, Vikas Srivastava, ExxonMobil Research and Eng; Julian Hallai, ExxonMobil Upstream Resesarch; Ning Ma, Peter Sarosi, HyunJo Jun, ExxonMobil Research and Eng; David Baker, ExxonMobil Upstream Resesarch, USA

**127. OMGH III: OCEAN MINING 1:
Exploration & Environment (V. 1)**

Thursday June 20 10:30 S Pacific 2

Chair: Akira Usui, Kochi Univ, Japan

Historical Background of Preservation Reference Area (PRA) defined by the International Seabed Authority (ISA)

Tomohiko Fukushima, JAMSTEC, Japan

Preliminary Results of Environmental Monitoring of Seafloor Massive Sulphide Excavation and Lifting Tests in the Okinawa Trough

Noboyuki Okamoto, Yoshiaki Igarashi, Takaaki Matsui, Japan Oil, Gas & Metals National Corp; Tomohiko Fukushima, Japan Agency for Marine-Earth Science and Tech, Japan

Small-scale Distribution Patterns of Hydrogenetic Ferromanganese Crusts in the NW Pacific Seamounts; A Reconnaissance Survey using ROVs and a Manned Submersible

Akira Usui, Koichi Univ; Katsuhiko Suzuki, JAMSTEC, Japan

Experimental Study to Assess the pH Effect on Metal Release from Fe-Mn Nodules and Pelagic Clays

Kyoko Yamaoka, Atsushi Suzuki, Geological Survey of Japan, AIST; Quan Wang, Hodaka Kawahata, Univ of Tokyo, Japan

Preliminary Shipboard Observations of Nodule Fauna in a Polymetallic Nodule Area of the Western Part of the Clarion-Clipperton Fracture Zone

Akira Tsune, Chisato Murakami, Deep Ocean Resources Development, Japan

Continuous Observation of Turbulent Flow Near the Hydrothermal Venting Area in the Okinawa Trough, Japan

Yasuo Furushima, JAMSTEC; Hironori Higashi, National Inst for Environmental Studies; Tatsuo Fukuhara, KANSO Co; Takeya Matsuda, Kokusai Kogyo Co; Naoki Furuichi, Japan Fisheries Research and Education Agency; Hiroyuki Yamamoto, Tomohiko Fukushima, JAMSTEC, Japan

Precise U-Th Concentration and ²³⁴U/²³⁸U Analysis of Seawater from the Okinawa Trough Using MC-ICPMS [Oral Presentation]

Lisheng Wang, Zhibang Ma, Inst of Geology and Environment, CAS; Zhilei Sun, Inst of Earth Science, CAS; Xuefeng Wang, Jule Xiao, Inst of Geology and Environment, CAS, China

**128. MECHANICS, COLLISION, RELIABILITY II: Impact,
Explosion (V. 4)**

Thursday June 20 10:30 S Pacific 3

Chair Sa Young Hong, KRISO, Korea

Co-Chair: Yingchun Xie, Ocean Univ of China

Analysis of Impact Resistance Characteristics of Water-filled Tank Structure under Impact Load

Lin Zhang, Tao Zhang, Tuguang Liu, Zhouhang Yi, Huazhong Univ of Sci & Tech, China

The Influence of Modelling Weld Effects When Optimizing Thin-Walled Structures for Crashworthiness

Kennie Berntsson, Aalto Univ, Finland; Mihkei Kõrgesaar, TalTech Univ, Estonia; Bruno Reinaldo Goncalves, Jani Romanoff, Aalto Univ, Finland

On Dynamic Effects of Bulbous Bow Crushing

Jun Chen, Ling Zhu, Wuhan Univ of Technology, China; Preben T Pedersen, DTU, Denmark

Dynamic Responses of Bridge-Subsoil System Subjected to Barge Collision and Running Safety Analysis of High-Speed Train

Chaoyi Xia, Beijing Jiaotong Univ; Qin Ma, CCCC Highway Consultants; Jiacheng Huang, He Xia, Beijing Jiaotong Univ, China

Signal Analysis of Ship Hull Structure Response Subjected to Underwater Explosion Based on Modified Empirical Mode Decomposition Method

Fulin Yu, Lingling Ji, Lei Song, Fengguang Jia, Hongyuan Sun, Shandong Jiaotong Univ, China

Numerical Simulation of the Ship Multi-layer Container Structure Response Subjected to Blast Load with RKDG-FEM Method

Fulin Yu, Lingling Ji, Shandong Jiaotong Univ; Hui Wang, Shandong Huaihe River Basin Water Resource Planning and Design Inst; Bo Gao, Zhuoyi Yang, Fang Xue, Wenchao Cui, Shandong Jiaotong Univ, China

Modeling Research on Safety Distance of ship and Offshore Drilling Platform

Yujiang Guo, Yuan Zhuang, Yubo Jia, Wuhan Univ of Technology, China

129. ADVANCED SHIP TECH XIII: Stability & Safety (V. 4)
Thursday June 20 10:30 S Pacific 4

Chair: Michal Josten, Hamburg Univ of Technology, Germany
Co-Chair: Sa Young Hong, KRISO, Korea

Prediction of the Movement of Moored Vessels Due to Exceeded Mooring Load Limits

Michal Josten, Hamburg Univ of Technology, Germany

A Comparison Study on Response Estimation of Mooring Lines Using Different Models

Muyang Wang, Ocean Univ of China; Xiaoqiang Ji, Jiangsu Longyuan Offshore Wind Power; Lin Zhou, Qianxiang Yu, Fushun Liu, Ocean Univ of China, China

On the Racking Assessment of Pure Car Truck Carrier Vessels

Gianmarco Vergassola, Dario Boote, Tatiana Pais, Francesco Ogano, Lorenzo Paci, Univ of Genoa, Italy

Numerical Study on Effectiveness of Cross-Flooding Device with Different Compartment Arrangements

Zhenghao Liu, Shanghai Jiao Tong Univ; Jianing Li, Yue Ding, Shanghai Waigaoqiao Shipbuilding; Decheng Wan, Shanghai Jiao Tong Univ, China

Realization of Ship Damage Stability Calculation in CATIA by Application Development

Zongke Zhang, Shengjie Xu, Marine Design & Research Inst of China, China

130. OCEAN TECHNOLOGY XII: Deepwater Drilling 1 (V. 1)
Thursday June 20 10:30 Sea Pearl 2-4

Chair: Alan M Wang, Offshore Oil Engineering, China

A Coming ISO Standard – Offshore Drilling Conductor Driving Depth Design and Operation Guideline

Renjun Xie, Gang Tong, Guoxian Xu, Yi Wu, Shujie Liu, CNOOC Research Inst, China

Intelligent Early Kick Detection in Ultra-deepwater High-Temperature High-Pressure (HPHT) Wells Based on Big Data Technology

Qishuai Yin, Jin Yang, China Univ of Petroleum (Beijing), China; Ali Takbiri Borujeni, West Virginia Univ, USA; Shanshan Shi, Ting Sun, Yuming Yang, China Univ of Petroleum (Beijing); Yanan Geng, Qiang Xia, CNOOC Research Inst; Xiaodong Wu, Xin Zhao, China Univ of Petroleum (Beijing), China

Key Drilling Technique and Practice of Ultra-deepwater High-Temperature High-Pressure (HPHT) in LS25 of South China Sea
Yi Huang, Jin Yang, Qishuai Yin, China Univ of Petroleum (Beijing);
Zhong Li, Hexing Liu, CNOOC, China; Ali Takbiri Borujeni, West Virginia Univ, USA; Ting Sun, Dongsheng Xu, Shanshan Shi, Yichi Zhang, China Univ of Petroleum (Beijing), China

Comparative Investigation of Dynamic Analysis Models for Subsea Wellhead System in Deepwater
Yuanjiang Chang, Jiayi Li, Jian Wang, Zhenyu Nie, Baoping Cai, Xiuquan Liu, Guoming Chen, Anti Xue, China Univ of Petroleum (East China), China

Testing String Dynamics when Jarring Stuck Packer
Baokui Gao, Lisong Wang, Tianxiang Hu, China Univ of Petroleum (Beijing), China

131. ARCTIC VII: Arctic Ship Design (V. 1)

Thursday June 20 10:30 Nautilus Ste

Chair: Ove Tobias Gudmestad, Univ of Stavanger, Norway
Co-chair: Rocky S Taylor, Memorial Univ of Newfoundland, Canada

An Analytical Model for Ice Impact Load Prediction
Meng Zhang, Harsha Cheemakurthy, Karl Garne, Magnus Burman, KTH Royal Inst of Technology, Sweden

A Structural Analysis Procedure Combining Linear and Nonlinear FE Methods for Polar Ship
Shifeng Ding, Li Zhou, Jiangsu Univ of Science & Technology; Chenkang Zhong, Jing Cao, Shanghai Rules and Research Inst; Qun Yin, Jian Zhang, Jiangsu Univ of Science & Technology, China

Study on the Water Drag Force on Sea Ice Ridge Keels
Peng Lu, Yongheng Zu, Xiaowei Cao, Yan Wu, Zhijun Li, Dalian Univ of Technology, China

THURSDAY 12:00

Thursday 12:00 Nautilus Suite, 6F

15th Student Forum: *Require Advance Reservation*
Industry Presentation and Interaction

Additive Manufacturing (3D Printing)
John Barnes, ExxonMobil Technical Computing Co, USA

Refreshment served.

THURSDAY 13:10

Keynote

Thursday 13:10 S Pacific 2, 7F

World's First Lifting Test for Seafloor Massive Sulphides in the Okinawa Trough in the EEZ of Japan [Invited]
Nobuyuki Okamoto, Satoshi Shiokawa, Seiya Kawano, Norihiro Yamaji, Hironobu Sakurai, Masaomi Kurihara, Japan Oil, Gas & Metals National Corp, Japan

132. HYDRODYNAMICS XIV: CCP-WSI Blind Tests 2(V. 1)
Thursday June 20 14:00 Coral 1

Chair: Ling Qian, Manchester Metropolitan Univ, UK

Numerical Study on Focused Wave Interactions with Moored Floating Structures

Zhenghao Liu, Yuan Zhuang, Decheng Wan, Gang Chen, Shanghai Jiao Tong Univ, China

Numerical Simulation of Wave Structure Interaction Using QaleFOAM

Shiqiang Yan, Jinghua Wang, Junxian Wang, Qingwei Ma, Zhihua Xie, City, Univ of London, UK

CCP-WSI Blind Test Series 3: OpenFOAM Simulation of Focused Wave Interaction with a Simplified Wave Energy Converter

Hao Chen, Ling Qian, Zhihua Ma, Wei Bai, Zaibin Lin, Manchester Metropolitan Univ, UK

Focused Wave Interaction with Floating Structures by In-house Codes

Lin Cheng, Jinhai Zheng, Hohai Univ; Hanbin Gu, Xiwu Gong, Zhejiang Ocean Univ, China

CCP-WSI Blind Test Series 3: Assessment of the Required Model Fidelity for Numerical Simulation of Wave Interactions with Floating Structures [Oral presentation]

E Ransley, Univ of Plymouth; Shiqiang Yan, City, Univ of London; D Greaves, Univ of Plymouth, UK

133. HYDRODYNAMICS XX: Floating Tunnel, Bridge 2 (V. 1)
Thursday June 20 14:00 Coral 2

Chair: H K Lee, Korea Advanced Inst of Sci. & Tech, Korea

Co-Chair: HeonYong Kang, Texas A&M Univ, USA

The Experimental Study on Corrosion Behavior of Steel in Submerged Floating Tunnels: A review [Oral presentation]

Jae-Chan Park, Sang-Lyul Cha, Hyung-Jo Jung, Korea Advanced Inst of Sci & Tech, Korea

The Submerged Floating Tube Bridge for the Norwegian Fjords

Arianna Minoretti, Eidem Mathias Egeland, TaleEgeberg Aasland, Norwegian Public Roads Administration, Norway

Coupled Hydroelastic Analysis of a Submerged Floating Tunnel [Oral presentation]

HeonYong Kang, Moo-Hyun Kim, Texas A&M Univ, USA

Prediction of Concrete Creep by Multi-Model Averaging

S. L. Cha, S. S. Jin, H. K. Ju, H. J. Jung, Korea Advanced Inst of Sci & Tech, Korea

Evaluation of Tensile Force on Submerged Floating Tunnel considering Live Loads [Oral presentation]

Hyo-Gyoung Kwak, Gyu-Jin Kim, Korea Advanced Inst of Sci. & Tech, Korea

134. RENEWABLE ENERGY XIV: Energy Storage (V.1)
Thursday June 20 14:00 Coral 4

Chair: Shuichi Nagata, Saga Univ, Japan

Design of Renewables-battery Combined Energy System for Energy Isolated Island

Wongwan Jung, Jinyeong Jeong, Daejun Chang, Korea Advanced Inst of Sci & Tech (KAIST), Korea

Zirconium-Doped TiO₂(B) Anode for Advanced Li-ion Batteries
Sergey L. Sinebryukhov, Denis P. Opra, Alexander A. Sokolov, Anatoly B. Podgorbunsky, Sergey V. Gnedenkov, Inst of Chemistry, FEB RAS, Russia

Marine Renewable Energy Sources for Desalination, Generating Freshwater and Lithium
Jennifer Leijon, Sara Anttila, Anna E. Frost, Sofia Kontos, Jens Engström, Mats Leijon, Cecilia Boström, Uppsala Univ, Sweden

135. SUBSEA, PIPELINES, RISERS XI: Subsea (V. 2)

Thursday June 20 14:00 Coral 5

Chair: Frank K. Lim, 2H Offshore Engineering, UK

Numerical Study of Heat Transfer Characteristics in a Subsea Wet Oil Storage Tank

Dongxi Liu, Shanghai Maritime Univ; Jin Wang, COTEC Offshore Engineering Solutions; Yunxiang You, Shanghai Jiao Tong Univ, China

Influence of Gathering System Selection and Positioning on Flowline Costs and Production Rates

Philip Stape, Ronnymaxwell SG de Santana, Juliana S Baioco, COPPE/UF RJ; Djalene Rocoça, Petrobras; Breno P Jacob, COPPE/UF RJ, Brazil

Numerical Simulations of Sediment Transport and Scour around Monopile Using CFD and DEM Coupling

Seongjin Song, Sunho Park, Korea Maritime and Ocean Univ, Korea

Non-intrusive Identification of Offshore Sand Production in Water-gas Pipe Flow via Acoustic Sensing Method

Kai Wang, Gang Liu, China Univ. of Petroleum (East China); Zhiguo Liu, Beijing Normal Univ; Yichen Li, China Univ. of Petroleum (East China), China

136. HPM XIV: EAC IV: Carbon Steel; Sour Performance 2 (V. 4)

Thursday June 20 14:00 S Pacific 1

Chair: Takuya Hara, Nippon Steel & Sumitomo Metal, Japan

Co-Chair: Nobuyuki Ishikawa, JFE Steel, Japan

Environmentally Assisted Cracking of High Strength Nickel Based Alloys

Ramgopal Thodla, B.C. Rollins, DNV GL, USA

Sulfide Stress Crack Testing: Pit vs. Crack Determination [Oral presentation]

Timothy D Anderson, Weiji Huang, Doug P Fairchild, ExxonMobil Production; Neeraj Thirumalai, Garrett Wadsworth, Adnan Ozekcin, Hyun Jo Jun, ExxonMobil Corporate Strategic Research, USA

Sulfide Stress Crack Testing: Study of Surface Damage Features Using Profilometry [Oral presentation]

Thirumalai Neeraj, Garrett Wadsworth, Hyun Jo Jun, Adnan Ozekcin, ExxonMobil Research and Engineering; Timothy Anderson, Weiji Huang, Doug Fairchild, ExxonMobil Production, USA

Measuring Crack Propagation Resistance of Line Pipe Steels in Sour Service – A Comparative Study of Test Methods and Materials Response

Hyun Jo Jun, ExxonMobil Research and Engineering; Vikas Srivastava, Brown Univ; Ning Ma, Peter Sarosi, Thirumalai Neeraj, ExxonMobil Research and Engineering, USA

**137. OMGH IV: OCEAN MINING 2:
Environment & Mining System (V. 1)**

Thursday June 20 14:00 S Pacific 2

Chair: Gopkumar Kuttikrishnan, National Inst of Ocean Technology (NIOT), India

Co-Chair Kyoko Yamaoka, Geological Survey of Japan, AIST; Japan

A Note on 3D Coupled Static and Transient Behaviors of 6,000-m-long Pipe-Buffer Gimballed at Surface Ship at Sea: At-sea Operation and Simulation [Oral Presentation; IJOPE, 2019]

Jin S Chung, ISOPE, USA

230Th/U Chronology of a Carbonate Chimney from Area of Activity Fluid Venting in Okinawa Trough [Oral Presentation]

Zhibang Ma, Lisheng Wang, Inst of Geology and Environment, CAS; Zhilei Sun, Zhilei Sun, Inst of Earth Science, CAS; Xuefeng Wang, Jule Xiao, Inst of Geology and Environment, CAS, China

System Preparations for Deep Water Locomotion Trials of Deep Sea Mining Crawler

C. Janarthanan, V. Chandran, V. Sundaramoorthi, B.O. Vishwanath, S. Rajesh, P. Muthuvel, K Gopkumar, N.R. Ramesh, G.A. Ramadass, M.A. Atmanand, National Inst of Ocean Technology, India

Assessment of Potential Axial Resonance Due to VIV for Ultra-deep Risers

Richard Harrison, Frank Lim, 2H Offshore Engineering, UK

138. MECHANICS, COLLISION, RELIABILITY III: Risk (V. 4)

Thursday June 20 14:00 S Pacific 3

Chair: Sa Young Hong, KRISO, Korea

Co-chair: Yinlong Shao, Powerchina Huadong Engineering, China

Risk Control for Innovative Deepwater Artificial Seabed System Through Barrier Management

Xingwei Zhen, Dalian Univ of Technology, China; Jan E Vinnem, NTNU, Norway; Yi Huang, Dalian Univ of Technology, China

Wind Barrier Selection for a HSR S-S Box Girder Bridge Based on Train Running Safety

Weiwei Guo, He Xia, Beijing Jiaotong Univ, China

Study on Risk Reduction Performance of Offshore Platform Firewall Subjected to Fire and Explosion Hazards

Qun Yin, Jian Zhang, Yan-jie Sun, Ai-ming Cai, Jiangsu Univ of Science & Technology, China

Hydrodynamic Analysis of a Semi-submersible Radar Platform

Yingchun Xie, Xuyan Liu, Yuanfang Sun, Yucheng Xiao, Guijie Liu, Dingxin Leng, Xiaojie Tian, Ocean Univ of China, China

Study on the Risk Analysis and Safety Evaluation for Crude Oil Offshore Lightering in Qinzhou Gulf

Jian Deng, Xinpei Hua, Cheng Xie, Rui Wang, Hui Sheng, Yuming Zhang, Wuhan Univ of Technology, China

Optimization Solution to the Multibody System of Anchor Chain and Comparison Analysis

Xiaoqin Chen, Zhaobing Jiang, Sanjiang Univ; Junyi Liu, JianNan Zhou, Univ of PLA, China

**139. OCEAN TECHNOLOGY X:
Structural Health Monitoring 1 (V. 1)**

Thursday June 20 14:00 S Pacific 4

Chair: Xavier P J Ficquet, VEQTER Ltd, UK

Dynamic Analysis of Longline Aquaculture Systems by a Coupled 3D Numerical Model

Longhuan Zhu, Kimberly Huguenard, Univ of Maine; David W Fredriksson, US Naval Academy, USA

The Effect of Short-term Variability of Cross-Spectral Analysis on Wave Buoy Analogy

Yanfei Hong, Toshio Iseki, Tokyo Univ of Marine Science & Tech, Japan; Ulrik Dam Nielsen, Technical Univ of Denmark, Denmark

The Influence Study of Inlet System in Recirculating Aquaculture Tank on Flow Field Characteristics

Qian Zhang, Xiaozhong Ren, Changfeng Liu, Xianying Shi, Jinsong Gui, Chunwei Bi, Boru Xue, Dalian Ocean Univ, China

A Study on the Influence of Bottom Structure in Recirculating Aquaculture Tank on Velocity Field

Boru Xue, Xiaozhong Ren, Xianying Shi, Changfeng Liu, Linping Yu, Chunwei Bi, Qian Zhang, Dalian Ocean Univ, China

140. OCEAN TECHNOLOGY XIII: Deepwater Drilling 2 (V. 1)

Thursday June 20 14:00 Sea Pearl 2-4

Chair: Alan Wang, Offshore Oil Engineering (COOEC), China

Advanced Real-time Gas Kick Detection Using Machine Learning Technology

Jin Yang, Ting Sun, Ying Zhao, China Univ. of Petroleum (Beijing), China; Ali Takbiri Borujeni, Univ of West Virginia, USA; Haidong Shi, PetroChina Research Inst of Petroleum Exploration & Development; Hao Yang, China Univ of Geosciences, China

Digital Root Cause Analysis for Investigating the Potential Risk of Subsea XMT Leaks

A Primozić, Wood; RM Chandima Ratnayake, Univ of Stavanger; A Barre, Wood, Norway

Determination of Safe Mud Temperature Window for Drilling Operation in Hydrate Deposits in Shenhu Area, Northern South China Sea

Qingchao Li, Yuanfang Cheng, Guihua Wang, Jia Wei, Jiping Ding, Chuanliang Yan, Zhongying Han, China Univ of Petroleum (East China), China

Calculation of Extending Limit of Horizontal Well Drilled in Offshore Hydrate Bearing Sediments

Wenlong Li, Deli Gao, Jin Yang, Wenjun Huang, Zhiqiang Hu, Xin Li, Leichuan Tan, Zhengxu Wang, China Univ of Petroleum (Beijing), China

Silicate and Aluminum-based Drilling Fluids for Stabilizing the Wellbore in Deepwater Drilling

Xin Zhao, Zhongsong Qiu, China Univ of Petroleum (East China); Mingliang Wang, CNOOC Energy Technology&Services; Jianguo Xu, Hanyi Zhong, Ganghua Chen, China Univ of Petroleum (East China), China

Study on Safety Control Technology of Surface Conductor Jetting Penetration in Ultra-Deep Water Soft Formation Drilling

Hongshu Wei, CNOOC; Jin Yang, China Univ of Petroleum; Zhengli Liu, Jihua Ye, Junbin Zhang, De Yan, CNOOC; Shuzhan Li, Kang Zhang, Wenxing Wang, China Univ of Petroleum, China

141. ARCTIC VIII: Arctic Shipping (V. 1)
Thursday June 20 14:00 Nautilus Ste

Chair: Natalya A Marchenko, Univ Centre in Svalbard, Norway

Shipping LNG from the Arctic: A True Story
Frederic J-L Hannon, TOTAL, France

Arctic Sea Route Planning Based on POLARIS Rule
Hye-Won Lee, Myung-Il Roh, Ki-Su Kim, Seoul National Univ; Kuk-Jin Kang, Seong-Yeob Jung, KRISO, Korea

Method to Optimize Ship Route in Ice-Covered Waters Based on Vector Polygons
Ruslan I. May, Valery Fedyakov, Sergei V. Frolov, O V Tarovic, A G Topaj, Arctic and Antarctic Research Inst, Russia

Comparison between Full-scale Measurements and Theoretical Fuel Consumption Model in a Real Arctic Ship Navigation
Xiao Lang, Chalmers Univ of Technology, Sweden; Chi Zhang, Wuhan Univ of Technology, China; Lars Jonasson, Wengang Mao, Leif Eriksson, Chalmers Univ of Technology, Sweden; Di Zhang, Wuhan Univ of Technology, China

Assessment of Prospects for Using Meteorological Satellite Data to Plan Vessel's Route in the Arctic Waters [Proceedings only]
Denis A. Akmaykin, Maritime State Univ; Victor M Grinyak, Vladivostok State Univ of Economics & Service, Russia

THURSDAY 16:20

142. HYDRODYNAMICS XV: CFD Modeling on FPSO (V. 1)
Thursday June 20 16:20 Coral 1

Chair: Sa Young Hong, KRISO, Korea

State of the Art of Application of CFD to Offshore Hydrodynamics [Oral Presentation]
J W Kim, TechnipFMC, USA

CFD Simulation Modeling Practice Verification for FPSO Hull Current Load
Yih Jeng Teng, Jaime Hui Choo Tan, TechnipFMC, Malaysia; Hyun Chul Jang, Jang Whan Kim, Genesis Oil and Gas Consultants Ltd, USA; Chang Seop Kwon, Seong Mo Yeon, Samsung Heavy Industries; Sung Chul Hwang, Bo Woo Nam, KRISO, Korea; Zhen Jia Huang, ExxonMobil Upstream Research, USA

CFD Modeling Practice for Sidewall Greenwater Problem of a FPSO in Irregular Waves
Bo Woo Nam, Shung-Chul Hwang, Yoon-Jin Ha, Kyong-Hwan Kim, Sa Young Hong, Korea Research Inst of Ships & Ocean Eng; H J Kim, Samsung Heavy Industries, Korea; J W Kim, Genesis Oil and Gas Consultants Ltd; J Huang, ExxonMobil Upstream Research, USA

Model Test of Slamming and Green Water Loads on FPSO for Validation of Numerical Tools
Kyong-Hwan Kim, Yoon-Jin Ha, Bo Woo Nam, Sa Young Hong, Korea Research Inst of Ships & Ocean Eng; Hyun Jo Kim, Samsung Heavy Industries, Korea

CFD Modeling Practice for Calculation of FPSO Bow Impact by Focusing Wave
Sa Young Hong, Yoon-Jin Ha, Bo Woo Nam, Kyong-Hwan Kim, Sung-Chul Hwang, Korea Research Inst of Ships & Ocean Eng; H J Kim, Samsung Heavy

Industries, Korea; J W Kim, Genesis Oil and Gas Consultants Ltd; J Huang, ExxonMobil Upstream Research, USA

143. HYDRODYNAMICS XXI: Floating Tunnel, Bridge 3 Panel
Thursday June 20 16:20 Coral 2

Chair: HeonYong Kang, Texas A&M Univ, USA

Current Progresses in Floating Tunnel, Bridge, and City

Panelists:

Mathias Egeland Eidem, Norwegian Public Roads Administration, Norway
Tina Vejrum, COWI, Denmark
William Otto, MARIN, Netherlands
Heang-Ki Lee, KAIST, Korea
Moo-Hyun Kim, Texas A&M Univ, USA

144. Renewable Energy XV: Panel
Thursday June 20 16:20 Coral 4

Chair: Eva Loukogeorgaki, Aristotle Univ. of Thessaloniki, Greece

All interested participants are welcome to the panel.

145. SUBSEA, PIPELINES, RISERS XII: Pipeline Mechanics (V. 2)
Thursday June 20 16:20 Coral 5

Chair: Frank K. Lim, 2H Offshore Engineering, UK
Co-chair: Yijun Shen, DOET, Newcastle upon Tyne, UK

Influence of Bulkhead on Impact of Pipe-in-Pipe

Chenggong Sun, Menglan Duan, China Univ of Petroleum (Beijing); Bing Dai, China Petroleum Tech & Development; Yi Wang, Changzhi Zhang, Naem Ullah, China Univ of Petroleum (Beijing), China

Effects of Angle and Interface Friction of Buried Pipe Bend on Lateral Resistance Force

Mina Kawamura, Yutaka Sawada, Yoko Ohta, Kobe Univ; Kohei Ono, Ehime Univ; Toshinori Kawabata, Kobe Univ, Japan

Model Experiments on Influence of Sheet-pile Extraction on Mechanical Behavior of Twin Buried Flexible Pipes

Mayu Toda, Yutaka Sawada, Noritake Miyazaki, Takuya Ishiwawa, Toshinori Kawabata, Kobe Univ, Japan

146. HPM XV: Panel
Thursday June 20 16:20 S Pacific 1

Chair: Hyun Jo Jun, ExxonMobil Research & Engineering, NJ, USA

147. OMGH V: OCEAN MINING 3: Mining System (V. 1)
Thursday June 20 16:20 S Pacific 2

Chair: Nobuyuki Okamoto, Japan Oil, Gas & Metals National Corp, Japan
Co-Chair: Gopkumar Kuttikrishnan, National Inst of Ocean Technology

Investigation on Characteristics of Forces and Motions of Spherical Particles in Deep Sea Hydraulic Collecting

Guocheng Zhao, Longfei Xiao, Ziyu Yue, Weijie Zhao, Yufeng Kou, Shanghai Jiao Tong Univ, China

Model Test of Skip Lifting System for Deep-Sea Mining

Jianyu Xiao, Inst of Deep-sea Science & Eng, CAS, China; Sup Hong, KRISO, Korea; Ning Yang, Hong Xiong, Jun Liu, Wen Ou, Inst of Deep-sea

Science & Eng, CAS, China; John Parianos, Nautilus Minerals, Australia;
Yuxiang Chen, Inst of Deep-sea Science & Eng, CAS, China

**A Free Standing Vertical Transportation System for Mining Seafloor
Massive Sulphides [Oral Presentation]**
Frank Lim, 2H Offshore Engineering, UK

**148. MECHANICS, COLLISION, RELIABILITY IV:
Risk & Strength (V. 4)**

Thursday June 20 16:20 S Pacific 3

Chair: Jin Kim, Korea Research Inst of Ships & Ocean Eng, Korea
Co-chair: Zhe Tian, Ocean Univ of China, China

Buckling Numerical Analysis of Stiffened Cylindrical Structures
Gianmarco Vergassola, Dario Boote, Chiara Manca, Univ of Genova, Italy

**Tripping Buckling Strength of Ring-stiffener in Stiffened Cylindrical
Shells under External Pressure**
Daisuke Shiomitsu, Kyushu Univ; Kimihiro Toh, Univ of Tokyo; Daisuke
Yanagihara, Kyushu Univ, Japan

**A Method of Dynamic Response Analysis Based on Laplace Transform
for Fully Symmetric Floating Platform**
Ruimin Wang, Ocean Univ of China; Zhengqiang Jiang, Powerchina
Huadong Engineering; Zhe Tian, Hongchao Lu, Xujie Wang, Fushun Liu,
Ocean Univ of China, China

**Behavior of Slip-resistant Connections under Long-term Sustained Loads
and Recent Experiences with the Determination of the Slip Factor**
Andreas Ebert, Fraunhofer IGP; Ralf Glienke, HS Wismar Univ of Applied
Sci Tech; Maik Dörre, Fraunhofer IGP; Knuth-Michael Henkel, Univ of
Rostock, Germany

**An Experimental Research on the Vibration of a Ship Propulsion Model
Excited by Dynamic Excitations**
Zhe Tian, Ocean Univ of China; Yinlong Shao, Powerchina Huadong
Engineering; Lin Zhou, Yingchun Xie, Ocean Univ of China

**Experimental Investigation on Flood-resistant Performance of Soaked
Masonry Structure**
Shuguang Liu, Qi Fang, Guihui Zhong, Hong Zhang, Sha Lou, Tongji Univ,
China

**149. OFFSHORE MECHANICS XI:
Structural Health Monitoring 2 (V. 1)**

Thursday June 20 16:20 S Pacific 4

Chair: Constantine Michailides, Cyprus Univ of Technology, Cyprus
Co-chair: Sudath C Siriwardane, Univ of Stavanger, Norway

**Identification of Friction-Coupled Offshore Platforms by Output-Only
Method**
Tobias Friis, Technical Univ of Denmark; Karsten Vesterholm, Univ of
Southern Denmark; Evangelos Katsanos, Technical Univ of Denmark;
Anders Brandt, Univ of Southern Denmark; Rune Brincker, Technical Univ
of Denmark, Denmark

**A PCA-based Damage Detecting Method for Jacket Platform under
Random Wave Excitations**
Wei Li, Yan Huang, Yufeng Tian, Tianjin Univ, China

**Structural Health Monitoring on a Girth Welded Pipe with Residual
Stress Measurements**
Xavier P J Ficquet, Ed Kingston, Douglas Cave, VEQTER Ltd, UK

Validation of a Bayesian Belief Network (BBN) Model of an Offshore Decommissioning Operation

Mei Ling Fam, Nanyang Technical Univ, Singapore; Xuhong He, Lloyd's Register Consulting, Sweden; Dimitrios Konovessis, Singapore Inst of Technology; Lin Seng Ong, Nanyang Technological Univ; Hoon Kiang Tan, Lloyd's Register Singapore, Singapore

Riser Structural Health Monitoring with Numerical Sensors

W.C. Chung, H.Y. Kang, M.H. Kim, Texas A&M Univ, USA; Rafael G. Pestana, Petrobras R&D, Brazil

SHM-Device for Underwater Deformation Measurements on Grouted Joints

Patrick Rzeczkowski, Ludger Lohaus, Leibniz Univ Hannover, Germany

150. OCEAN TECHNOLOGY XIV: Deepwater Drilling 3 (V. 1)

Thursday June 20 16:20 Sea Pearl 2-4

Chair: Alan Wang, Offshore Oil Engineering, China

Co-Chair: Bo Woo Nam, KRISO, Korea

Fully Coupled Drift-off Analysis of Platform/Riser/Inner Pipe System for Deepwater Drilling

Xiuquan Liu, Shenyang Zhang, Guoming Chen, Yuanjiang Chang, China Univ of Petroleum (East China); Liangbin Xu, Leixiang Sheng, CNOOC Research Inst, China

Mechanics-based Analysis on the 10 3/4" Casing Coupling Section under Non-symmetrical Extrusion

Li Bai, Gang Liu, Bowen Wang, Dou Mei, China Univ of Petroleum (Huadong), China

Experimental Study and Modeling of Methane Hydrate Dissociation by Depressurization and Chemical Injection

Tingji Ding, Ruihe Wang, Jiafang Xu, Xiaopu Wang, Zhenglian Yu, Yuanfang Cheng, Zhiyuan Wang, China Univ of Petroleum (East China), China

Mechanical Analysis of Subsea Wellhead in Deepwater Wells

Lisong Wang, Baokui Gao, Tianxiang Hu, Chao Ma, Jieli Wang, China Univ of Petroleum (Beijing), China

151. ARCTIC IX: Emergency & Remote Sensing (V. 1)

Thursday June 20 16:20 Nautilus Ste

Chair: Ivana Kubat, National Research Council Canada, Canada

"Marine Emergencies in the Arctic" – GIS Online for Preparedness, Response and Education

Nataliya Marchenko, University Centre in Svalbard, Norway

Change Characteristics of Bohai Sea Ice Area and Temperature Driving Factors

Ning Li, Wei Gu, Beijing Normal Univ, China

Performance Study of Miniature Near-infrared Spectrometer Used in Cold Polar Environments

Liwen Nan, Hangzhou Wang, Xiaoping Wang, Ying Chen, Zhejiang Univ, China



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Arctic Materials	Safety, Risk, Reliability	Cryogenic Materials
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Structural Health SHM	Nonlinear Waves	Tubular & Linepipe
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