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9th Sloshing Dynamics & Design
9th Frontier Energy Tech
10th Strain-Based Design
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San Francisco, California, June 25-30

(As of March 21, 2017)

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ISOPE, P.O. Box 189
Cupertino, CA 95015-0189, USA
Fax: +1-650-254-2038
meetings@isope.org; www.isope.org
The Twenty-seventh (2017) International Ocean and Polar Engineering Conference
San Francisco, June 25–30, 2017

The number at end of the session title indicates the tentative number of the proceedings volume. Only the changes on titles or authors the ISOPE-2017 Technical Program Committee (TPC) received in writing before March 21, 2017 are reflected in this program. Final corrections will be updated in the Conference Proceedings of peer-reviewed papers and the Final Program. Conference proceedings (ISBN 978-1-880653-97-5; ISSN 1098-6189) will be available as a set of 4 volumes (4,900 pp. est.) from ISOPE during and after the Conference.
Proceedings papers are indexed by Engineering Index and Compendex, Google Scholars, Scopus, Web of Science and others.

SUNDAY, June 25
Conference Reception
17:00 Atrium

MONDAY 08:30

1. Opening General Session:
OCEAN, ARCTIC AND ENERGY REVIEW—2017 (V. 1)

Monday June 26 08:30 Grand Peninsula

Chair: John J Niedzwecki, Texas A & M University, USA
Co-Chair: Wataru Koterayama, Kyushu University, Japan

Conference Opening Address
Hyun Woo Jin, ISOPE President, ExxonMobil Research & Engineering, USA

Innovation, Science and Engineering - Enabling Offshore and Arctic Production [Oral presentation]
Roald Lokken, ExxonMobil Production Co, USA

New England Aqua Ventus - Floating Offshore Wind Demonstration Project [Oral presentation]
Habib J Dagher, Univ of Maine, USA
MONDAY 10:30

2. HYDRODYNAMICS I:
MetOcean I (V. 3)
Monday
June 26
10:30
Room 1

Chair: Qingwei Ma, The City University, London, UK
Co-Chair: Naoyuki Inukai, Nagaoka University of Technology, Japan

Metocean Extreme Estimations: The Sensitivity of Offshore Design Measures to Statistics' Uncertainties
Rami Zughayer, Univ of Stavanger, Norway; Francesco De Leo, Giovanni Besio, Univ degli studi di Genova, Italy; Ove Gudmestad, Univ of Stavanger, Norway

Arctic Wave Observation by Drifting Type Wave Buoys in 2016
Takuji Waseda, Adrean Webb, Univ of Tokyo; Kazutoshi Sato, Jun Inoue, National Inst of Polar Research, Japan

Sea-level Records Analysis with Improved Empirical Mode Decomposition (EMD) and Artificial Neural Networks (ANN)
Han Soo Lee, Hiroshima Univ; Sooyoul Kim, Tottori Univ, Japan

An Analytical Model for Determining the Holland β Parameter Based on Logarithmic Spiral Trajectory
Xiaozhou Ma, Haiying Niu, Yuxiang Ma, Guohai Dong, Dalian Univ of Tech, China

Hydrodynamic Conditions for Typhoon Induced Fluid Mud in Open Muddy Channels
Qixiu Pang, Ruibo Zhang, Chunpeng Wen, Tianjin Research Inst of Water Transport Eng, China

Analysis of Extreme Waves with Tropical Cyclone Wave Hindcast Data
Zhuxiao Shao, Bingchen Liang, Xinying Pan, Huijun Gao, Ocean Univ of China, China

Numerical Study on Wind Wave in Limited Wind Zone
Yifeng Zhang, Tianjin Research Inst for Water Transport Engineering, China

Research and Realization of Telemetry and Telecontrol System of Intelligent Buoy
Caiyun Xu, Langxion Gan, Chunhui Zhou, Yuanyou Zheng, Lei Zhang, Wuhan Univ of Tech, China

3. LNG SLOSHING I:
Numerical & Experimental Methods I (V. 3)
Monday
June 26
10:30
Room 2

Chair: Yusong Cao, C-Z Marine Technology, USA

A Time Domain Model to Evaluate the Liquid Cargo Motion Influence on the Ship Motion
Daniel P Vieira, Edgard B Malta, Carlos H Fucatu, Technomar Engenharia Oceanica; Kazuo Nishimoto, Univ of Sao Paulo, Brazil
Numerical Study on Sloshing in a Sway Tank with an Inner Horizontal Perforated Plate
Heng Jin, Yong Liu, Huajun Li, Ocean Univ of China, China

MPS Simulation of Sloshing in a Tuned Liquid Damper
Xiao Wen, Youlin Zhang, Xiang Chen, Decheng Wan, Shanghai Jiao Tong Univ, China

Numerical Modelling of Nonlinear Sloshing in Tuned Liquid Damper (TLD)
Saravanan Gurusamy, Deepak Kumar, IIT Madras, India

Numerical Prediction of Wave Impact on a Cylinder Body Mounted in a Sloshing Tank
Il-Ryong Park, Je-In Kim, Dong-Eui Univ; Sa-Young Hong, Bo-Woo Nam, Korea Research Inst of Ships & Ocean Engineering, Korea

Effects of the Arrangement of Vertical Baffles on Liquid Sloshing by MPS Method
Xiang Chen, Chengping Rao, Decheng Wan, Shanghai Jiao Tong Univ, China

A Coupling Methodology to Model Near and Far Field Effects of Structures & Wave Energy Converters Due to Wave Interaction
Vasiliki Stratigaki, Peter Troch, Ghent Univ, Belgium; David Forehand, Univ of Edinburgh, UK

Energy Balance Analysis Method in Oscillating Type Wave Converter
Hao Wang, Jeffrey M Falzarano, Yuanzhe Zhi, Yujie Liu, Texas A&M Univ, USA

Intact and Damaged Survivability of an Offshore Floating Moored OWC
Ahmed Elhanafi, Gregor MacFarlane, Alan Gleming, Zhi Leong, AMC, Univ of Tasmania, Australia

Numerical Investigation of the Hydrodynamic Performance of the Dual-Chamber Oscillating Water Columns
Rong-Quan Wang, Dezhi Ning, Dalian Univ of Tech, China

Numerical Analysis on Drift Force Acting on a Floating OWC-Type Wave Energy Converter "Backward Bent Duct Buoy" by Vortex Method
Shuichi Nagata, Yasutaka Imai, Tengen Murakami, Saga Univ; Yutaka Okamoto, Hitachi Zosen, Japan

A Parametric Study on Oscillating Water Column Wave Energy Converter Applicable to Breakwater
Sewan Park, Bo Woo Nam, Kyong-Hwan Kim, Keyyong Hong, Korea Research Inst of Ships & Ocean Eng, Korea

An Experimental Study of Hydrodynamics of an Improved OWC Converter
Chun-Han Ko, Ching-Piao Tsai, Chia-Yu Chuang, Ying-Chi Cheng, National Chung Hsing Univ, Taiwan, China
A Study on the Effects of OWC Wave Power Generation on Chloride Penetration of Concrete
Changhyuck Lim, Korea Research Inst of Ships & Ocean Eng; Gyuyong Kim, Bokyeong Lee, Chungnam National Univ; Young-Duck Kim, Gilwon Kim, Jong-Su Choi, Korea Research Inst of Ships & Ocean Eng, Korea

KEYNOTE
Monday June 26 10:30 Room 4

Introduction: Piotr Moncarz, Exponent, USA

Evolving Materials Challenges for Subsea Developments [Oral presentation]
Eric J Wright, ExxonMobil Production Co; Cecilie A Haarseth, ExxonMobil Upstream Research Co, USA

5. ASSET INTEGRITY I: Assessments & Analysis (V. 4)
Monday June 26 10:30 Room 4

Chair: Eric J Wright, ExxonMobil Production Co, USA

Optimized Materials for High Integrity Well Completions
Eric J Wright, ExxonMobil Production Co, USA

Aging and Fatigue - Combined Testing of Welded Joints under Offshore Conditions
Mareike Collmann, Maik Wefer, Fraunhofer IWES, Germany

Fracture Mechanics-based Approach for Quantifying Corrosion Damage of Offshore Structures
Mahammad Z Ariffin, Zhongmin Xiao, Hanyang Technological Univ, Singapore; R Ajit Shenoi, Univ of Southampton, UK

Probabilistic Engineering Critical Assessment of Circumferential Girth Weld Flaws in Sour Service
A Bahrami, ExxonMobil Production; D Baker, ExxonMobil Research; X cui, R Oikonomidis, A M Crintea, TWI, UK

6. SBD I: Strain Capacity and Material Properties (V. 4)
Monday June 26 10:30 Room 5

Chair: Michele Panico, ExxonMobil Upstream Research Co, USA

A Comparison of Strain Based Design ECA Models
J R Gordon, N C Gordon, Microalloying International; G Swank, F Richards, Alaska Gas Development, USA

The Effect of Thermal Aging on Grade X70 Tensile, Charpy and Fracture Toughness Properties
J R Gordon, G Keith, Microalloying International; G Swank, F Richards, Alaska Gas Development; J M Gray, Microalloyed Steel Inst, USA
Material Tensile Properties for Strain-Based Design of Clad Pipelines
William Mohr, Paul Zelenak, EWI, USA

Strain Capacity Assessment of Laser Surface Remelted Girth Weld Joint of X70 Pipeline
Hongyuan Chen, CNPC Tubular Goods Research Inst, China

Strain Capacity in Compression or Bending of High-Strain Line Pipes
Takekazu Arakawa, Nobuhisa Suzuki, JFE Steel, Japan

Industrial Application of SENT and Segment Testing on Deepwater Buckle Arrestor Assembly Installed by S-Lay
Andrea Fonzo, Riccardo Porta, Centro Sviluppo Materiali, Italy; Ruud Selker, Ping Liu, INTECSEA; Erich Jurdik, Jay Chaudhuri, South Stream Transport, Netherlands

7. VORTEX-INDUCED VIBRATIONS I (V. 3)
Monday June 26 10:30 Room 6

Chair: S. Etienne, Ecole Polytechnique de Montreal, Canada
Co-Chair: Jiasong Wang, Shanghai Jiao Tong Univ, China

Vortex Induced Vibration of Riser with Low Span to Diameter Ratio Buoyancy Module
Dixia Fan, Michael Triantafyllou, Massachusetts Institute of Technology, USA

Vortex Shedding Behaviour of a Horizontal Circular Cylinder near the Free Surface with Different Submerged Depths
Qian Li, Qingwei Ma, Shi Qiang Yan, City Univ London, UK

CFD Simulation of Flow around Finite Stubby Circular Cylinder with Free End
Jiawei He, Weiwen Zhao, Decheng Wan, Shang Jiao Tong Univ, China

Investigation of Pipe-Soil Interaction on the Fatigue Life Extension of Subsea Pipeline Free Spans
Yusha Han, Ed Clukey, Naveen Ravirals, Paul Jukes, The Jukes Group, USA

Large-eddy Simulation of Turbulence Characteristics of Oscillatory Flow Over 3-D Vortex Ripples
Iason A Chalmoukis, Athanassios A Dimas, Univ of Patras, Greece

VIM Induced Fatigue Damages on Steel Catenary Risers of a Semi-Submersible FPS in South China Sea
Tie Ren, Tiebing Shan, Zhiping Shen, Pu Wang, Marine Design & Research Inst of China; Shixiao Fu, Shanghai Jiao Tong Univ, China
8. OCEAN TECHNOLOGY I:
LNG, Bunkering, FLNG (V. 1)

Monday June 26 10:30 Room 7

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

Frequency Domain Analysis on Hydrodynamic Characteristics of Four Vessels Located in Close Proximity
Yun Ho Kim, Jang Pyo Hong, Seok K Cho, Dong H Jung, Boo Woo Nam, Korea Research Inst of Ships & Ocean Engineering, Korea

Development of Simulator Systems for FLBT(Floating LNG Bunkering Terminal)
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 Engineering, Korea

Development and Experiment of FLBT Multiple Docking Aid System
Seung-Gi Lee, Jin-Lyul Park, Juin Information System; Hong-Gun Sung, Korea Research Inst of Ships & Ocean Engineering, Korea

Application of a Simplified Method of Dynamic Modeling for Cold Box in FLNG Liquefaction Process
Yan Li, Xichong Yu, Chunsheng Wang, CNOOC Research Inst; Jianlu Zhu, China Univ of Petroleum (Huadong); Qing Wang, CNOOC Research Inst, China

Optimization Analysis of Heavy Hydrocarbon Recovery Process for FLNG Unit Applicable for South China Sea Target Gas Field
Xichong Yu, Bin Xie, CNOOC Research Inst; Yuxing Li, China Univ of Petroleum; Yaling Wu, China Huanqiu Contracting & Eng; Qing Wang, Yan Li, Bin Cheng, CNOOC Research Inst, China

The Development of Systems-Based CBM for LNG-FPSO Topside Process Maintenance System
Seung-Yeol Yoo, Su-Bong Lee, Soon-Sup Lee, Gyeongsang National Univ, Korea

9. MECHANICS & COLLISION I (V. 4)

Monday June 26 10:30 Room 8

Chair: Myung-II Roh, Seoul National Univ, Korea

Assessment of the Double-Hull Side Structure Response in Severe Ship Collisions
Min Zhang, Jingxi Liu, Huazhong Univ of Science & Tech, China

Numerical Simulation of Barge Collision with High-Speed Railway Bridge Piers
Chaoyi Xia, Beijing Jiaotong Univ; Jin Ma, CCCC Highway Consultants; He Xia, Beijing Jiaotong Univ, China

Study on Path Planning of Ship Dynamic Collision Avoidance in Restricted Water Based on AFS Algorithm
Wei Deng, Langxiong Gan, Chunhui Zhou, Yuanzhou Zheng, Lei Zhang, Wuhan Univ of Tech, China
Development of Utility Tool for Small Craft Processing Recorded Class B AIS Data
Misako Urakami, Hisaya Motogi, Tomohiro Sunada, Oshima College; Takayuki Watanabe, Nobukazu Wakabayashi, Kobe Univ, Japan

Nonlinear Similar Design Method on Ultimate Strength Experiment of Hull Girder
Xingshao Kong, Tian Yuan, Wuhan Univ of Tech, China

Research on the Crushing Energy Absorption and Underwater Blast Resistance Performances of Corrugated Cores Sandwich Panels
Yanchang Zhang, Marine Design & Research Inst of China; Kun Liu, Zili Wang, Jiangsu Univ of Science & Tech, China

Statistical Investigation of the Influential Parameters for Probability Analysis of Ship-bridge Collision Based on AIS Data
Jin Pan, Yong Wang, Shiwen Huang, Wuhan Univ of Tech; Mingcai Xu, Huazhong Univ of Science & Tech, China

10. FRONTIER ENERGY I: EOR (V. 1)
Monday June 26 10:30 Room 9
Chair: R. Ayer, SK Innovation, Korea

Study on the Application of Sonar Images in Recognition of Oil-Bearing Sediments
Baojuan Li, Wei An, CNOOC Research Inst; Xinghua Zhou, First Inst of Oceanography, SOA; Yupeng Zhao, CNOOC Research Inst; Xiaowei Shi, SOA; Jianwei Li, CNOOC Research Inst, China

Highly Efficient Environmental Treatment Technology of Fracturing Flow-back Fluid Offshore in China
Xingzun Wang, Bumin Guo, Yantao Xu, Wenkui Yuang, Ling Chen, China Oilfield Services Ltd; Haishan Zhang, Jianping Ding, CNOOC, China

Characterization of Channel Gas Reservoirs with an Aquifer by Ensemble Smoother with Discrete Cosine Transform and Facies Ratio Preservation
Jonggeun Choe, Choongho Lee, Sungil Kim, Seoul National Univ; Hundon Shin, Inha Univ; Dae Sung Lee, Dong-A Univ, Korea

Determination of Mass Transfer Coefficient During CO2 Diffusion into Oil Filled Packed Bed
Lanlan Jiang, Research Inst of Innovative Tech. for the Earth, Japan; Xingbo Li, Minghao Yu, Weizhong Li, Yongchen Song, Dalian Univ of Tech, China

Experimental Feasibility Study of a Novel Organic-Inorganic Hybrid Material for Offshore Oil Well Cementation
Jiapei Du, Yuhuan Bu, Zhonghou Shen, China Univ of Petroleum-Qingdao, China

Study on Dynamic Simulation for Produced Liquid Treatment Process in Offshore Heavy Oil Thermal Recovery
Xiaying Du, Jihai Liu, Chunyu Liu, CNOOC China, China
11. ARCTIC I:
Structures in Ice Modeling

Monday June 26 10:30 Room 10

Chair: Shaheem Islam, National Research Council Canada, Canada.
Co-chair: N Otsuka, Hokkaido University, Japan

Ice Load Calculation Using Material Point Method with Considering the Influence of Ice Thickness and Structure Width
Guiyong Zhang, Yaomei Wang, Biye Yang, Zhi Zong, Dalian Univ of Tech, China

Model Tests Study of the Ice Loads on Multi-piled Oil Piers in Bohai Sea
Wei Li, Yan Huang, Tianjin Univ, China

On the Effect of Managed Ice Field Parameters on Global Loads of a DP Vessel
Mohammed Islam, Tanvir Sayeed, Jungyong Wang, Jim Millan, National Research Council, Canada

Analysis of the Effect of Structural Compliance During Medium-Scale Laboratory Tests on Ice Crushing Dynamics
P Birajdar, R S Taylor, R Hossain, Memorial Univ of Newfoundland, Canada

Investigation of the Positioning Performances for DP Vessels with Thruster Failure Modes by a Novel Synthesized Criterion
Shenegwen Xu, Xuefeng Wang, Lei Wang, Xin Li, Lijun Yang, Bo Li, Shanghai Jiao Tong Univ, China

MONDAY 13:15

PLENARY

Monday June 26 13:15 Regency AB

Introduction: WanC Kan, ExxonMobil Production Co., USA

Meeting the Challenges of Near-to-Come Subsea Field Developments: From Carbon Steel Pipe to New Material/Pipe Concepts [Oral Presentation]
Roberto Bruschi, SAIPEN, Italy

12. HYDRODYNAMICS II:
MetOcean 2 (V. 3)

Monday June 26 14:00 Room 1

Chair: Sa Young Hong, KRISO, Korea
Co-Chair: Soo Youl Kim, Tottori University, Japan

Wave Hindcasting and Extreme Value Analysis for North-western Coast of Sri Lanka
D P C Lknnath, H P G M Caldera, D P L Ranasinghe, Lanka Hydraulic Inst, Sri Lanka

Characteristics of Residual Water Level Variation along China Coast and Its Relation to Sea Level Change
Hui Wang, Kexiu Liu, Wenjing Fan, Jianlong Feng, Shouhua Liu, National Marine Data & Info. Service, China

**Directional Grouping of Rogue Waves Off the West Coast of Ireland**
Brandon Strong, Teledyne RD Instruments, USA; Frederic Dias, Jason D Flanagan, University College Dublin, Ireland; Eugene Terray, Woods Hole Oceanographic Inst, USA

**Air-sea Interaction on Ocean Wave in the Northern South China Sea During the Cold Air**
Lifang Jiang, State Oceanic Administration; Yi Yin, South China Sea Inst of Oceanology; Chunxia Liu, Guangzhou Inst of Tropical & Marine Meterology, China

**Assessment of Tropical Cyclones in ECMWF Reanalysis Data over the Northwest Pacific Ocean**
Jiangxia Li, Shunqi Pan, Yongping Chen, Hohai Univ, China

**Berth Operability and Port Downtime Due to Met-Ocean in Eastern Thailand**
Wissanu Hattha, Tetsuya Hiraishi, Kyoto Univ, Japan

**Analysis Flow Mechanism of Cambodian South Coastal Region**
Naoyuki Inukai, Nagaoka Univ of Tech, Japan; Kopy Neam, Chamnab Em, CES Co, Cambodia

**13. LNG SLOSHING II: Numerical & Experimental Methods 2 (V. 3)**
Monday June 26 14:00 Room 2

Chair: Decheng Wan, Shanghai Jiao Tong Univ, China

**Simulating Sloshing Fluids in 2D Tanks by a Meshless Method**
Bang-Fuh Chen, Bing-han Lin, National Sun Yat-sen Univ, Taiwan, China

**Application of the Lie-group Scheme in Euclidean Space Solving Nonlinear Sloshing Behaviors**
Shin-Ping Soon, Chao-Feng Shih, Yung-Wei Chen, Yu-Chen Liu, National Taiwan Ocean Univ, Taiwan, China

**Wave Performance Inside of a Two-Dimensional Tank under Combined Horizontal Excitations**
Yucen Lu, Tongming Zhou, Wenhua Zhao, Univ of Western Australia, Australia

**Experiment of Natural Gas Liquefaction Process with Double Mixed Refrigerant under Sloshing Conditions**
Jianlu Zhu, Yuxing Li, Xueyu Chang, Congzheng Sun, Jie Chen, Weiping Zeng, China Univ of Petroleum-Qingdao, China

**Investigation of the Motion Accuracy Influence on Sloshing Model Test Results**
J Neugebauer, S Liu, R Potthoff, B O el Moctar, Univ of Duisburg-Essen, Germany

**A Study on Sloshing Behavior for Moss Type LNG Tank based on SPH Numerical Simulation and Large-Scale Model Experiment**
Chong Ma, Masayoshi Oka, Takahiro Ando, National Maritime Research Inst; Naoya Matsubara, Kawasaki Heavy Industries, Japan
Experimental Study of Slosh-Induced Loads on LNG-Fuel Tank of Container Ship
Yonghwan Kim, Jieung Kim, Sang-Yeob Kim, Joungkyu Lee, Seoul National Univ;
Kwang-Min Lee, Young-Jae Sung, Hyundai Heavy Industries, Korea

14. RENEWABLE ENERGY II:
Wave Energy Converter 2 (V. 1)
Monday June 26 14:00 Room 3
Chair: Keyyong Hong, KRISO, Korea
Co-Chair: Vasiliki Stratigaki, Ghent Univ, Belgium

Model Predictive Control Design for a Nearshore Oscillating Surge Wave Energy
Converter to Balance Power Absorption Against Load Accumulation
Nikhar J Abbas, Nathan M Tom, National Renewable Energy Lab, USA

Development of the 2nd generation Oscillating Surge Wave Energy Converter with
Variable Geometry
Michael Kelly, South Dakota School of Mines & Tech; Tom Nathan, Yi-Hsiang Yu,
Robert Thresher, National Renewable Energy Lab, USA

Model Testing of Oscillating-body Wave Energy Converters with Nonlinear Power-
Take-Off Systems in Regular Waves
Yang Li, Longfei Xiao, Xiaolong Xiao, Tongtong Wang, Shanghai Jiao Tong Univ, China

Wave Energy Conversion Utilizing Vertical Motion of Floats put in the Water
Chambers Array Aligned in the Direction of Wave Propagation
Kesayoshi Hadano, Yoshiyuki Nagase, Wanyuan Li, Yamaguchi Univ, Japan

Backward Bent Duct Buoy Wave Energy Conversion Technology and Perspective in
China
Bijun Wu, Meng Li, Rukang Wu, Tianxiang Chen, Guangzhou Inst of Energy
Conversion,CAS, China

15. ASSET INTEGRITY II:
Inspection & Monitoring (V. 4)
Monday June 26 14:00 Room 4
Chair: Ali Reza, Exponent, USA

Research on Detecting and Locating Tubing Leakage of Offshore Gas Wells Based
on Acoustic Method
Di Liu, Jianchun Fan, Zhenwei Liang, Ningyi Lv, China Univ of Petroleum-Beijing,
China

Diagnostic Testing of Gas Wells with Sustained Casing Pressure by Application of
He Tracer
Ximing Zhang, Jianchun Fan, Ningyi Lv, China Univ of Petroleum – Beijing; Shujie Liu,
Min Wen, CNOOC Research Inst, China

Damage Area Measurement of Composite Specimen Using Digital Image Processing
Kyuhwan Lee, Byungjik Son, Konyang Univ, Korea
Strain Rate and Transferability of Fatigue Testing for Lead Alloy Sheathing in High Voltage Subsea Power Cables
Audun Johanson, Nexans Norway; Antonio Alvaro, SINTEF Materials and Chemistry, Norway

Assigning API 570 Pipe Classifications Based on the Composition and Temperature of Complex Hydrocarbon Streams
Brian A Ott, Ali Reza, Peter Veloo, Exponent, USA

Combined Advanced Inspection & Analysis Method for Flexible Riser Remnant Life Assessment
Kirk S Francis, Nader Matari, Flexlife, USA; Bede Ani, Flexlife, UK; Stuart Mitchell, Flexlife, USA

16. SBD II:
Strain Based Design and Assessment 1 (V. 4)
Monday June 26 14:00 Room 5
Chair: Andrea Fonzo, Centro Sviluppo Materiali, Italy

Collapse Pressures of Cold Formed Pipes with Rounded Stress vs. Strain Curves
Yukinobu Nagata, Nippon Steel & Sumitomo Metal; Eiji Tsuru, Nippon Steel & Sumikin Technology, Japan

Coupled Effect of Y/T Ratio and Internal Pressure on the Ductile Fracture of Buckled Pipes
Nima Mohajer Rahbari, Roger Cheng, Samer Adeeb, Univ of Alberta, Canada

Engineering Critical Assessment of CRA Lined Pipes Subjected to Large Plastic Strains
Wasy Akhtar, Mark Cerkovnik, 2H Offshore, USA

Strain-Based Pipeline Repair Via Type B Split Sleeve
Justin M Crapps, Xin Yue, Ronald A Berlin, ExxonMobil Upstream Research, USA; Heider A Suarez, Peter Pribytkov, Exxon Neftegas, Russia; Brent Vyvial, Stree Engineering Services; Jared Proegler, CRC Evans Automatic Welding, USA

Compression and Tension Demands to Ensure Pipeline Integrity Against Ground Motion or Longitudinal Slope Movement
Nobuhisa Suzuki, Takekazu Arakawa, JEF Steel, Japan

Effects of Dent on Compression Capacity of Line Pipe and Seismic Integrity of Pipeline
Atsushi Suganuma, Masataka Hayashiguchi, Toho Gas; Tetsuji Kitano, Nagoya Univ; Nobuhisa Suzuki, Takekazu Arakawa, JFE Steel; Hiroyuki Horikarwa, JFE Engineering, Japan

17. VORTEX-INDUCED VIBRATIONS II (V. 3)
Monday June 26 14:00 Room 6
Chair: M.S. Triantafyllou, M.I.T., USA

Interaction between Two Vibrating Cylinders Immersed in Fluid
Zhonglu Lin, Dongfang Liang, Univ of Cambridge, UK; Ming Zhao, Univ of Western Sydney, Australia

Drag Coefficient Enhancement for Dual Cylinders in Oscillatory Flow
Dixia Fan, Massachusetts Institute of Technology, USA; Xiaotong Zhang, Shanghai Jiao Tong Univ, China; Michael Triantafyllou, Massachusetts Institute of Technology, USA

Experimental Investigation on the Vortex-Induced Vibrations in Yawed Flexible Cylinders
Daniel P Vieira, Univ of Sao Paulo; Andre L C Fujarra, Federal Univ of Santa Catarina, Brazil

Modal Vibrations of Side-by-side and Tandem Vertical Riser Pipes Experiencing a Stepped Current
Di Deng, Bowen Fu, Decheng Wan, Shanghai Jiao Tong Univ, China

Numerical Simulation of the Vortex-induced Motion of a Deep Draft Semi-submersible
Zhenghao Liu, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong Univ, China

18. OCEAN TECHNOLOGY II: LNG, Bunkering, FLNG 2 (1 V. 1)
Monday June 26 14:00 Room 7
Chair: A. Nezamian, Aurecon Group, Australia
Co-Chair: Seok Kyu. Cho, Korea Research Inst. of Ships & Ocean Eng. (KRISO), Korea

The Dynamic Performance Analysis of Double Mixed Refrigerant Liquefaction Process for Floating Liquid Natural Gas (FLNG)
Qing Wang, Xichong Yu, Yan Li, Bing Cheng, Kaiwen Xiao, CNOOC Research Inst, China

Field and Numerical Investigations for Constructing a Cooling Water Outlet at LNG-Fired Thermal Power Station
Nobuyuki Iwamae, Kazuhiro Iida, Kajima Corp; Daiki Hatakeda, Hokkaido Electric Power; Takako Fukayama, Satoshi Inagaki, Kajima Corp, Japan

Cost Control and Schedule Certainty for LNG Transfer Lines
Christian Geertsen, ITP InTerPipe; Alain Giacosa, Total; Sebastien Bessou, Wayne P Grobbelaar, ITP InTerPipe, France

Subsea Invar PiP for Subsea Cryogenic Transport of LNG - Proof Through the Onshore Construction of Pipeline
Christian Geertsen, Wayne Grobbelaar, Sebastien Bessou, Lancini Dosso, ITP InTerPipe, France

Design and Evaluation of LNG-Hydrogen Hybrid Propulsion System for LNG Carrier
Jin young Jeong, Suwon Seo, Daejun Chang, Korea Advanced Inst of Science & Tech, Korea

Full Picture Discovery for Materials and Interface Designs on Next-Generation All-Solid-State Lithium Ion Rechargeable Batteries
Katsuya Teshima, Nobuyuki Zettsu, Shinshu Univ, Japan
Georgio Gkikas, SBM Offshore, Netherlands

19. MECHANICS & COLLISION II (V. 4)
Monday June 26 14:00 Room 8
Chair: Constantine Michailides, Liverpool John Moores Univ, UK
Co-Chair: Fulin Yu, Tsinghua Univ, China

Saturated Impulse of Pulse Loaded Square Plates Made of Steels with Various Yield Stresses
Xy, He, Ling Zhu, Wuhan Univ of Tech; Faliang Chen, Inst of Applied Physics & Computational Mathematics, China

Improvement of Fixed Offshore Platforms’ Boat Landing Performance Using Practicable Design Criteria
A Hamadelnil, Z A Razak, Petronas Carigali; E Matsoom, Sarawak Shell Berhad; V J Kurian, Univ Tech Petronas, Malaysia

Blast Resistant Design in Arctic Oil and Gas Facilities
Ali Sari, Istanbul Technical Univ, Turkey

Assessment and Modification of Empirical Formulae for Ship-bridge Impact
Jin Pan, Shiwen Huang, Wuhan Univ of Tech; Mingcai Xu, Huazhong Univ of Science & Tech, China

Storm Survival Inplace Analysis of Jack-ups
Linsong Song, Weiliang Dong, Jianjun Wang, Dongshi Wang, China Oilfield Services, China

Anti-sway Control of the Crane on an Offshore Supply Vessel Based on the Hardware-in-the-Loop Simulation
Luman Zhao, Seung-Ho Ham, Myung-Il Roh, Seoul National Univ, Korea

Experimental Analysis of Y Shape Stiffened Panels under Lateral Impact Load
Mingcai Xu, Bowen Zhang, Huazhong Univ of Science & Tech; Wang Jun, China Railway Science & Industry Rail Equipment; Wentong Song, Wuhan Lituo Bridge Protection Tech, China

Numerical Simulation of the Dynamic Response of a Beam Structure Impacted by Nonlinear Freak Wave
Hongxiang Xue, Shanghai Jiao Tong Univ, China

20. FRONTIER ENERGY II: Gas Hydrates & Deep-Ocean Minerals I (V. 1)
Monday June 26 14:00 Room 9
Chair: Masayo Kakumoto, National Inst of AIST, Japan

Experimental Estimation for Friction Strength at Contact Surfaces of Production Well and Sediment for Methane Hydrate Production Well Integrity
Masayo Kakumoto, Yasuhide Sakamoto, Shohei Noda, Jun Katagiri, National Inst of AIST, Japan
The Monitoring Technology of Environmental Effects of Gas Hydrate Production Process
Minghao Chun, Xiaodi Yang, Xiaqiao Luo, Zhenwen Liu, Ningxin Zhang, CNPC, China

Numerical and Experimental Comparison of Methane Hydrate Dissociation in Pore-scale Flow
Wu-Yang Sean, Tzu-Chuang Hsiang, Ya-Yun Shu, Chung Yuan Christian Univ; Chian-Te Yang, Ming-Jer Lee, National Taiwan Univ of Science & Tech, Taiwan, China

Effect of Fines on Stress-dalatancy of Methane Hydrate Bearing Sands
Masayuki Hyodo, Yang Wu, Shintaro Kajiyama, Yamaguchi Univ, Japan

Physical-Mechanical Properties of the Bottom Formations of the Hydrothermal Ore Fields on the Mid-Atlantic Ridge
Anatoliy V Kondratenko, Igor V Egorov, FSBI "VNIIOkeangeologia"; Viktor N Ivanov, Polar Marine Geosurvey Expedition; Dmitriy L Kell, Maria S Stepanova, FSBI "VNIIOkeangeologia"; Russia

YP 460 MPa Class Steel Plate with Excellent Low Temperature Fracture Toughness for Arctic Offshore Structures
JongChul Kim, GiJung Park, SungDoo Hwang, YongChan Seo, Hyundai Steel, Korea

Dynamic Responses of Aluminum Foam Sandwich Plates in the Repeated Impact at Low Temperature
Kailing Guo, Ling Zhu Yinggang Li, T X Yu, Qingwen Zhou, Wuhan Univ of Tech, China

An Offshore Platform for Exploration Drilling in Shallow Water Area of the Kara Sea
Olga A Sabodash, Vladislav N Baryshev, Nikita Y Tsimbelman, Far Eastern Federal Univ, Russia

Model Test Study on the Ice Pile-up Process in the Conductor Array of a Jacket Platform
Jianqiao Sun, Tianjin Univ; Xiaying Du, CNOOC Resesarch Inst; Yan Huang, Tianjin Univ, China

Applications of Wavelet Transform in Ice-induced Vibrations of Structures
Bowei Yu, National Univ of Singapore, Singapore
MONDAY 16:20

22. HYDRODYNAMICS III: Fluid-Structure Interactions (V. 3)
Monday June 26 16:20 Room 1

Chair: M Minoura, Osaka Univ, Japan

Numerical Study of Oscillatory Dual Cylinders in Tandem Arrangement
Xiaotong Zhang, Decheng Wan, Shanghai Jiao Tong Univ, China

Uncertainties in Wave Loads on Slender Pile Structures Due to Uncertainties in Modelling Waves and Associated Kinematics
Sverre Kristian Haver, Kåre Edvardsen, Gunnar Lian, Univ of Stavanger, Norway

Development of a 3-D Numerical Model for Simulating Interaction of Water Waves and Offshore Structures
Yu-Cheng Chang, Ching-Jer Huang, Chun-Yuan Lin, National Cheng Kung Univ, Taiwan, China

Evaluation of Wave-in-Deck Forces on Offshore Platform
Matteo Tirindelli, Chiara Maria Traverso, D'Appolonia S.p.A., Italy

Numerical Investigation on Wave Elevation around a Biofouled Cage Array
Chungwei Bi, Yunpeng Zhao, Guohai Dong, Tiaojian Xu, Huimin Hou, Dalian Univ of Tech, China

Numerical Simulation of the Vortex Structure around the Net Cage in Current
Mingfu Tang, Tiaojian Xu, Guohai Dong, Yunpeng Zhao, Dalian Univ of Tech, China

Suction Force and Multiple Frequencies Subjected to Oscillating Cylinder on Water Surface
Zhaobing Jiang, PLA Univ of Science & Tech, China; Mingyi Tan, Univ of Southampton, UK

23. LNG SLOSHING III: Fluid-Structure Interactions (V. 3)
Monday June 26 16:20 Room 2

Chair: Yonghwan Kim, Seoul National Univ, Korea

Study on the Sloshing Flow in an Elastic Tank with High Filling Liquid by MPS-FEM Coupled Method
Youlin Zhang, Xiang Chen, Chengping Rao, Decheng Wan, Shanghai Jiao Tong Univ, China

Dynamic Characteristics and Numerical Simulation of Liquid - Solid Coupling for the Suspension Structure of Advanced Lead-based Reactor Vessel Building
Jianbo Li, Guangzhou Li, Dalian Univ of Tech, China

Fluid Structure Interaction Analysis of Composite Structures Exposed to Sloshing
André Baeten, Augsburg Univ of Applied Sciences, Germany

**Numerical Studies on Sloshing Loads Using Sloshing Coupled Ship Motion Algorithm**
Jai Ram Saripilli, Indian Register of Shipping; Dbabrata Seb, IIT Kharagpur, India

**Hydrodynamic Analysis of Floating Structures with Baffled Sloshing Tanks**
Kang-Heon Lee, Jin-Seok Pakr, Jong-Wook Kim, Korea Atomic Energy Research Inst; Phill-Seung Lee, KAIST, Korea

**Anti-slosh Cairbag Performance in Relation to Rigidity and Load Transfer**
Erik Eenkhoorn, Accede b.v., Netherlands

**A Study on Effect of Liquid Motion in a Fully-filled 3D Tank on Moment on the Tank**
Yusong Cao, Fuwei Zhang, C-Z Marine Technology, USA

**Performance of Simplified Fluid Structure Tank and Pressure Vessel Models on Fixed Offshore Platforms**
Parag S Nimse, Wood Group; Rogerio Nakano, Altair Engineering, USA

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24. RENEWABLE ENERGY III:
Wave Energy Converter 3 (V. 1)
Monday June 26 16:20 Room 3
Chair: Seok-Won Hong, KRISO, Korea

**Numerical and Experimental Estimations of Hybrid 3kW Ocean Wave-power Generation System**
Jeongsoo Kim, Min-Su Park, Yeon-Ju Jeong, Young-Jun You, Yoon-Koog Hwang, Korea Inst of Civil Eng & Building Technology, Korea

**On the Absorption of Wave Power Using Ship Like Structures**
Kim Nielsen, Ramboll Group; Harry B Bingham, Technical Univ of Denmark; Jonas B Thomsen, Aalborg Univ, Denmark

**Dynamic Behaviors of Wave Energy Converters Connected to Large Semi-submersible**
Kyong-Hwan Kim, Sewan Park, Keyyoung Hong, Korea Research Inst of Ships & Ocean Eng; Hye-Bin Lee, Yoon-Hyuk Bae, Jeju National Univ, Korea

**Wavesax Device to Convert Wave Power into Electricity: Numerical and Scale Modelling Evaluation**
Maximo Paviani, Andrea Danelli, RSE Research on Energy System, Italy

**Hydrodynamic Performances of Wave Pass Two Buoys-Type Wave Energy Converter**
D C Lo, National Kaohsiung Marine Univ; T-W Hsu, National Taiwan Ocean Univ; C-D-Yang, National Kaohsiung Marine Univ, Taiwan, China
25. ASSET INTEGRITY III: Corrosion 1 (V. 4)
Monday June 26 16:20 Room 4

Chair: Cecilie Haarseth, Exxonmobil Upstream Research Co., USA

Use of Corrosion-Mitigating Thixotropic Gel for Riser Abandonment Inside Pull-tube
Kirk Francis, Nader Matari, Stuart Mitchell, Flexlife Co, USA

AC Corrosion of Electrically Heated Pipelines
Kristian T Solheim, Martin Hoeyer-Hansen, Jens K Lervik, SINTEF Energy Research; Arne Nysveen, NTNU, Norway

A Study on CO2 Removal Process Technology with Solvent Method on Offshore Platform
Hualei Yi, Haishan Zhu, Shaokai Chen, Yuxiao Jing, Xiangdong Liu, CNOOC Research Inst, China

Research on Silica Macroporous Materials Self-healing Coating
Meng Fang, CNPC Tubular Goods Research Inst, China

Effect of Lode Parameter in Mechanical Damage of Pressurized Pipelines
Yazid Madi, Mines ParisTech; Joseph Barae Djouda, EPF; Marie-Christine Demizieux, Clement Soret, ENGIE; Jacques Besson, Mines ParisTech, France

Probabilistic Seismic Hazard Analysis for the Estimation of Strain Demands due to Liquefaction induced Lateral Spreading
Smitha D Koduru, C-FER Technologies, Canada

Hydrogen Induced Cracking Test Results for Line Pipe in Mild Sour Environment
Takuya Hara, Nippon Steel & Sumitomo Metal, Japan

Reinforcement and Concrete Interface Corrosion Damage Detection Using Piezoelectric Ceramics
Shi Yan, Putian Zhao, Yong Dai, Weiling Liu, Shenyang Jianzhu Univ, China

26. SBD III: Strain Based Design and Assessment 2 (V. 4)
Monday June 26 16:20 Room 5

Chair: WT Cheng, ExxonMobil Upstream Research, USA
Co-Chair: E. Østby, DNV-GL, Norway

Benchmark Examples of Tensile Strain Capacity Prediction and Strain-Based Engineering Critical Assessment Calculations
D P Fairchild, ExxonMobil Production Co., USA, M Panico, J M Crapps, W Cheng, ExxonMobil Upstream Research, USA, M F Cook, ExxonMobil Production Co., USA

Implementation of a New Tool for Pipelines Integrity Evaluation: A Correlation between Local Strains and Hardness
Marie Christine Demizieux, ENGIE; Joseph Barae Djouda, Mines ParisTech; Clement Soret, ENGIE; Yazid Madi, Jacques Besson, Mines ParisTech, France
A Case Study of Design and Integrity Management Framework for Strain-Based Pipelines
M Panico, ExxonMobil Upstream Research; M Macia, D Fairchild, ExxonMobil Production; W Cheng, ExxonMobil Upstream Research, USA

Thermal-Hydraulics Modeling for Buried Gas Pipeline Strain-Based Design
Thomas Jurca, Stanley Yee, TransCanada, Canada

27. VORTEX-INDUCED VIBRATIONS III (V. 3)
Monday June 26 16:20 Room 6

Chair: Shiqiang Yan, City Univ London, UK

Spanwise Force Correlation of Rotating Square Cylinders in Three-dimensional Cross-flow
J-B Frigo, C Béguin, A Hay, S Etienne, D Pelletier, Ecole Polytechnique de Montreal, Canada

Time-Domain Vortex Induced Vibration Modelling on Offshore Tensioned Cables
Victor A Contreras, Morten T Lind, LICengineering, Denmark

Parametric Study of VIV Fatigue Analysis for SCR
SungJe Lee, Jeong-Dae Lee, Seock-hee Jun, Sung-Gun Park, Daewoo Shipbuilding & Marine Eng, Korea

A Stripwise Discrete Vortex Method for VIV Analysis
Zhi Zong, Li Zhouo, Jianhua Pang, Dalian Univ of Tech, China

Coupled Simulation of CFD and Nonlinear Cable Dynamics for Vortex-Induced Vibration of a Very Long Cable System
Hyung Taek Ahn, Euntaek Lee, Univ of Ulsan, Korea

Three Dimensional Numerical Simulation of Vortex Induced Vibration for an 800-m-Long Drilling Riser
Jiasong Wang, Ke Lin, Shanghai Jiao Tong Univ; Jiangliang Zhou, Liangbin Xu, Leixiang Sheng, CNOOC Research Center, China

Three-Dimensional Dynamics of Vortex-Induced Vibration on a Fluid-Conveying Pipe under the Subcritical Regime
Jinlong Duan, Ke Chen, Yunxiang You, Wei Li, Renfeng Wang, Shanghai Jiao Tong Univ, China

Vortex-Induced Vibrations of a Vertical Riser Pipe Experiencing an Oscillatory Flow
Bowen Fu, Duanmu Yu, Decheng Wan, Shanghai Jiao Tong Univ, China
28. OCEAN TECHNOLOGY III: 
LNG, Bunkering, FLNG 3 (V. 1) 
Monday June 26 16:20 Room 7

Chair: Xiaochuan Yu, Univ of New Orleans, USA

Numerical Study on the Hydrodynamic Effect of the SBT on the Motion Response of the LM-FPSO
Hyung Do Song, Hong Gun Sung, Jang Pyo Hong, Sung Chul Hwang, Suk-kyu Cho, Korea Research Inst of Ships & Ocean Engineering, Korea; Alaa Mansour, Chunga Wu, INTECSEA, USA

Numerical Investigation on Dynamic Responses of HMPE Mooring System with Damaged Lines
Yushun Lian, Hohai Univ; Haixiao Liu, Tianjin Univ; Jinhai Zheng, Hohai Univ, China

Effect of Wind and Current Loads to FDPSO Mooring Fatigue
Xudong Liu, Huilong Ren, Lei Yu, Yanlong Sun, Xiaoxiong Sun, Harbin Engineering Univ, China

Critical Issues for the Design and Classification of Offshore Offloading Buoys
Martin Dumont, Guillaume De Hauteclocque, Damien Rochette, Olivier Cartier, Bureau Veritas, France

A Comparative Study on Built-up Section and Rolled Section in FPSO Topside
Beom-Seon Jang, Sang Woong Han, Seoul National Univ; Sanghoon Shim, Sungwoo Im, POSCO, Korea

Global Performance Analysis of Concrete FPSO with Tangerine Transverse Cross Section
HeonYong Kang, Texas A&M Univ, USA; Jae-Young Cho, Jong-Heon Park, GS E&C, Korea

29. MECHANICS & HYDRO-ELASTICITY (V. 4) 
Monday June 26 16:20 Room 8

Chair: Yong Won Lee., Lloyds Register, UK

Nonlinear Wave Loads' Prediction Based on Three-Dimensional Hydroelasticity Theory in Irregular Waves
Kaihong Zhang, Huilong Ren, Hui Li, Siyu Wang, Harbin Engineering Univ, China

Evaluating the Vibration Performance of a Subsea Pump Module by Numerical Modelling and Full-Scale Testing
Pieter van Beek, Hajo Pereboom, Harmen Slot, TNO, Netherlands

Effective Thermo-Elastic Properties of FGMs for Micromechanical Behavior
Ji-Hwan Kim, Seok-in Bae, Seoul National Univ, Korea

An Experimental Investigation of Material Failure Criterion of High-Strength Hull Steel
Deyu Wang, Lei Yang, Shanghai Jiao Tong Univ; Zhengliang Peng, China Ship Development & Design Center; Zhonghua Cai, Shanghai Jiao Tong Univ, China
Finite Element Modeling of Ductile Fracture in Medium Curved Wide Plates
Diego Felipe Sarzosa Burgos, Univ of Sao Paulo, Brazil; Matthias Verstraete, Stijn Herteli, Ghent Univ, Belgium; Claudio Ruggieri, Univ of Sao Paulo, Brazil

Improved Hybrid Numerical Model for Fluid-Elastic Structure Interaction using FEM and MLPG_R
G Manoj Kumar, V Sriram, IIT Madras, India

30. FRONTIER ENERGY III: OCEAN MINING: Gas Hydrates & Deep-Ocean Minerals 2(V. 1)
Monday June 26 16:20 Room 9
Chair: Tomasz Abramowski, Interoceanmetal Joint Organization, Poland
Co-Chair: Ning Yang, Inst of Deepsea Science & Engineering, CAS, China

Structural Aggregation of Feasibility Factors for the Formal Assessment of the Polymetallic Nodules Deep Seabed Mining Value Chain
Tomasz Abramowski, Interoceanmetal Joint Organization, Poland

The Design of Sampling Machine for Mineral Resources
Ning Yang, Chao Xie, Ming Chen, Yuxiang Chen, Jinrong Zheng, Ming Zhang, Inst of Deepsea Science & Engineering, CAS, China

A Research Procedure to Obtain a Green Transport Plan for Deep Sea Mining Systems
Wenbin Ma, Dingena Schott, Gabriel Lodewijks, Delft Univ of Tech, Netherlands

Investigation on the Characteristics of Flow Field in Hydraulic Collecting for Deep-Ocean Mining
Guocheng Zhao, Longfei Xiao, Haining Lu, Zhiyi Chen, Shanghai Jiao Tong Univ, China

Numerical Investigation on Kinetics of Ore Particles in Deepsea Mining
Lei Liu, Jianmin Yang, Haining Lu, Tao Peng, Xinliang Tian, Shanghai Jiao Tong Univ, China

Non-intrusive Measurement of Offshore Sand Production in Boyhai Bay Using Vibration Sensor Method
Jialin Zhang, Gang Liu, Jiacheng Du, Kai Wang, China Univ of Petroleum (East China), China

Engineering-Geological Study of Hydrothermal Polymetallic Sulphides Ore Fields [Proceedings only]
Anatoly V. Kondratenko, Igor V. Egorov, FSBI «VNIIokeangeologia»; Victor N. Ivanov, Polar Marine Geosurvey Expedition; Dmitry L. Kell, FSBI «VNIIokeangeologia», Russia
31. ARCTIC III:
Arctic Structures 2 (V. 1)
Monday June 26 16:20 Room 10
Chair: Rocky S Taylor, Memorial University of Newfoundland, Canada
Co-chair: Ling Zhu, Wuhan Univ of Tech, China

Numerical Simulation of Offshore Wind Turbine Dynamics in Drifting Level Ice
Hakun Jang, MooHyun Kim, Texas A&M Univ, USA

Velocity Dependant Ice Load on Wide Sloping Structures
Yihe Wang, Leong Hien Poh, National Univ of Singapore, Singapore

Field Tests for Studying Ice Actions in Bohai Sea
Yanlin Wang, Shanshan Sun, Dalian Univ of Tech; Ke Ke, Lei Wang, SINOPEC; Dayong Zhang; Xiyu Zhao, Dalian Univ of Tech, China

Conceptual Design for Testing Ice Abrasion on Offshore Concrete Surfaces
Amanda M Ryan, Stephen Bruneau, Bruce Colbourne, Memorial Univ of Newfoundland, Canada

Silicone Based Icephobic Coating Assessment under Offshore Winter Conditions
Jean-Denis Brassard, Caroline Laforte, Univ de Quebec a Chicoutimi, Canada

32. HYDRODYNAMICS IV:
Floating Bodies 1(V. 3)
Tuesday June 27 08:00 Room 1
Chair: Yooil Kim, Inha University, Korea,
Co-Chair: A P Shashikala, National Inst. of Tech. – Calicut, India

Effect of Wave Interaction among Multiple Floating Bodies on Hydrodynamic Forces
Guanghua He, Zhengke Wang, Zhigang Zhang, Chi Qi, Harbin Inst of Tech, China

Computation of Wave Drift Forces and Motions for DTC Ship in Oblique Waves
Cong Liu, Decheng Wan, Shanghai Jiao Tong Univ, China

Rational Determination of Design Wave Using Combined Design Load Parameters (DLP) on Semi-Submersible with Twin Pontoon Type
WonHyuk Choi, DongKyoong Kim, Yongsun Baik, SeungHan Moon, Daewoo Shipbuilding & Marine Engineering, Korea

Hydrodynamic Study of Wave Evolution Characteristics around Semi-submersible Platform in Shallow Water with Submerged Terrain near Island
Ke Xia, Decheng Wan, Shanghai Jiao Tong Univ, China

Numerical Study of the Dynamic Characteristics of an Air-Gun Bubble Generated above the Solid Boundary with Boundary Element Method
Shiping Wang, Shuai Zhang, Aman Zhang, Harbin Engineering Univ, China
Accuracy Study of the Desingularized Boundary Element Method
Gang Xu, Edmond B Kenmeni, Jing Chen, Shuqi Wang, Jiangsu Univ of Science & Tech, China

Experimental Study on Motions of a Floating Rectangular Cylinder under Freak Waves
Wenbo Pan, Ningchuan Zhang, Guoxing Huang, Xiangyu Ma, Dalian Univ of Tech, China

33. LNG SLOSHING IV: Impact Assessment (V. 3)
Tuesday June 27 08:00 Room 2
Chair: André Baeten, Augsburg Univ of Applied Sciences, Germany
Co-Chair: Kyung Hwan Kim, KRISO, Korea

Fluid Resonance between Two Non-Identical Boxes
Shengchao Jiang, Dalian Univ of Tech, China

A Practical Approach to Sloshing Load Assessment on LNG Cargo Tank Using CFD
Je-Jun Park, Jun-Hyung Jung, SeiHwan Kim, Young-Bum Lee, Sung-Kon Han, Daewoo Shipbuilding & Marine Engineering, Korea

On the Novel Strength Assessment Procedure of Membrane Type Cargo Containment System
Jang Hyun Lee, Se Yun Hwang, Yooil Kim, Ho Sang Jang, Inha Univ; Kwang Seok Kim, Joong Kyoo Kang, Daewoo Shipbuilding & Marine Engineering, Korea

Sloshing Load Assessments for Mid-scale Single Row Floating LNG Solution
Chang Seop Kwon, Hyun Joe Kim, Samsung Heavy Industries, Korea; Jang Whan Kim, Technip, USA; Seong Mo Yeon, Yong Ho Choi, Jong Jin Park, Min Sung Chun, Samsung Heavy Industries, Korea

Comparison of Impact Pressure on 2D and 3D Tanks under Harmonic Excitation
Yonghwan Kim, Sang-Yeob Kim, Seoul National Univ, Korea

Analysis of Sloshing Impact Pressures Using Different Extreme Statistical Theories
Yonghwan Kim, Ekin Ceyda Cetin, Seoul National Univ, Korea

The Effects of Sloshing Reduction Device on Vessel Motions
Kyung Sung Kim, Tongmyong Univ, Korea; Moo Hyun Kim, Texas A&M Univ, USA

Anti-slosh Cairbag Case Study
Erik Eenkhoorn, Accede b.v., Netherlands

34. RENEWABLE ENERGY IV: Wave Energy Converter 4 (V. 1)
Tuesday June 27 08:00 Room 3
Chair: Decheng Wan, Shanghai Jiao Tong Univ, China

Application of Coupled Numerical Simulation to Design Wave Energy Converters
Aengus J Connolly, Wood Group, Ireland; Paul Brewster, Pure Marine Gen, UK

**Simulation of Volume of Overtopping and Water Feeding of Wave Overtopping Type Wave Power Generation**
Tomoya Inami, Hiromichi Tanaka, Tetsuo Sakurada, Tokai Univ, Japan

**Model Scale Submerged Hydraulic Power Take-Off with Adjustable Damping for Wave Energy Conversion**
Nigel C Kojimoto, Marcus Lehmann, Thomas Boerner, Bryan Murray, Lawrence Berkeley National Lab; M Reza Alam, Univ of California-Berkeley, USA

**Design Study of a Multipoint Mooring System of the Floating Wave Energy Converter in Deep Water with a Sloping Bottom**
Shuo Huang, Songwei Cheng, Yage You, Yunqiu Zhang, Guangzhou Inst of Energy Conversion, CAS, China

**Numerical and Experimental Estimations of Hybrid 3kW Ocean Wave-Power Generation System**
Jeongsoo Kim, Min-Su Park, Yeon-Ju Jeong, Young-Jun You, Yoon-Koog Hwang, Korea Inst of Civil Eng & Building Technology, Korea

**Effects of Separation Distances and Heading Angles for Wave Energy Converter Arrays in Time Domain**
Fatjara, Cranfield Univ, UK

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**35. SUBSEA, PIPELINES, RISERS I: Flexible and Umbilical 1 (V. 2)**

**A Procedure for Assessment of Umbilical Fatigue Damage Due to VIV**
Yusong Cao, Fuwei Zhang, C-Z Marine Technology, USA

**Understanding the Impact of Share Geometry on Seabed Cable Plough Performance**
Scott Robinson, Michael Brown, Andrew Brennan, Univ of Dundee; Michael Cortis, Charles Augarde, Will Coombs, Durham Univ, UK

**A Novel Bending Stiffness Rig for Identification of Subsea Cables’ and Umbilicals’ Sensitivity to Temperature under Sinusoidal Curvature Oscillations**
Lars Jordal, Roger Slora, Nexans Norway AS; Erwin Vermeer, Combiteq AS; Magnus Komperød, Nexans Norway AS, Norway

**Calculation of Roller Distance and Bending Diameter during Spooling and Handling of Umbilicals with Thin Wall Steel Tubes**
Bjørn Konradsen, Bjørn R Slora, Frank I Woll, Remy Basler, Eivind Havik, Nexans Norway AS, Norway

**Study on Multi-scale Analysis for Ocean Umbilical Cables Based on Asymptotic Homogeneous Methodology**
Zhixun Yang, Jun Yan, Bo Gao, Rui Wan, Haitao Hu, Qianjin Yue, Dalian Univ of Tech, China
Compatibility between Semi-Conductive LLDPE and Hydrocarbon Oil
Elise Olsen, Nexans Norway AS; Kjell Olafsen, SINTEF Materials and Chemistry, Norway

36. HPM I:
Advanced Steels 1 (V. 4)
Tuesday June 27 08:00 Room 5
Chair: HyunWoo Jin, ExxonMobil Research & Engineering, USA
Co-Chair: Murali Loukachenko, ArcelorMittal Global R&D, USA

Atomic-scale Analysis of grain Boundary Segregation Causing Macro-scale Delamination Observed in High-strength Low-carbon Steel Sheets [Oral presentation]
Jong-Chan Han, Ju-eun Kim, Jae-Bok Seol, POSTECH; Seok-Jong Seo, Chang-Gyung Park, POSCO, Korea

Interphase Precipitation of Core/Shell Nanoparticles Efficient for Strengthening in High Strength-Low Alloy Steels [Oral presentation]
S-H Na, J-B Seol, J-E Kimg, POSTECH, Korea; B Gault, D Raabe, Max-Planck Inst fur Eisenforschung, Germany; C-G- Park, POSTECH, Korea

Origin of Dynamic Strain Aging and Negative Strain-Rate Sensitivity in High-Mn TRIP Steels: Faster is Stronger [Oral presentation]
Jae-Bok Seol, J-G Kim, H-S Kim, C-G Park, POSTECH, Korea

Development of YP460 N/mm2 Class Heavy Thick Plate with Excellent Brittle Crack Arrestability and Weldability for Large Container Carriers
Kazukuni Hase, Katsuyuki Ichimiya, Keiji Ueda, Tsunehisa Handa, Taiki Eto, Masahiro Aoki, JFE Steel, Japan

Effect of Specimen Length on Long Crack Arrest Behavior in Ultra Wide Duplex ESSO Test
Hisakazu Tajika, Satoshi Igi, Tsunehisa Handa, Tetsuya Tagawa, Rinsei Ikeda, JFE Steel, Japan

Research and Development of Crack-arrest Plates for Ultra-large Container Ships in Baosteel
Shan Gao, Xiaohui Lu, Caiyi Zhang, Baoshan Iron & Steel; Zhongzhu Liu, CITIC Metal, China

37. VORTEX-INDUCED VIBRATIONS IV (V. 3)
Tuesday June 27 08:00 Room 6
Chair: Jin S Chung, ISOPE, USA
Co-Chair: Victor A Contreras, LiCengineering, Denmark

Passive Vibration Control of Pipe-in-Pipe (PIP) Systems Subjected to Vortex Induced Vibration (VIV)
Hong Hao, Hamid Matin Nikoo, Kaiming Bi, Curtin Univ of Tech, Australia

Experimental and Numerical Studies of Vibrations for a Hydrofoil
Renfeng Wang, Yunxiang You, Ke Chen, Xinshu Zhang, Tianqun Hu, Shanghai Jiao Tong Univ, China
The Study on the Arrangement of VIV Suppression Device on Top Tension Riser in Soliton Current
Xiaoliang Qi, Gang Xu, Kevin Huang, Yongtian Kang, DMAR Engineering, China

The Efficacy of Inverted Helical Strakes
Andrew Kilner, AMOG Inc, USA; Hayden Marcollo, Daniel Johnstone, Philip Kurts, Andrew Potts, AMOG Consulting, Australia

Vibration Mitigation Using Vacuum Breaker at SW Heating Pipeline in FSRU
Kwangjin Lee, Hyundai Heavy Industries, Korea

An Effective Time-Domain Approach for Prediction of Vortex-Induced Vibrations in a 2D Plane
Cheng, Su, Wei Lin, South China Univ of Tech, China

Consideration of HVIV and VIV Response of SLWRs
Andrew A Kilner, AMOG Consulting, USA; Hayden Marcollo, AMOG Pty Ltd, Australia

38. OCEAN TECHNOLOGY IV:
LNG Storage (V. 1)
Tuesday June 27 08:00 Room 7
Chair: Piotr Moncarz, Exponent, USA
Co-Chair: Hong Gun Sung, KRISO, Korea

Design Comparisons of Large-scale LNG Storage Outer Tank
Kangwon Lee, Seul-kee Lee, Junhui Kim, KOGAS, Korea

Enhancing the Post-Ultimate Behavior or Reinforced Concrete Offshore Structures
Tea Visnjic, Piotr Moncarz, Exponent, USA

A Transition of Philosophies of Fracture Safety in Liquefied Natural Gas Storage Tanks
Tomoya Kawabata, Univ of Tokyo; Hitoshi Hirose, GH Engineering Consultants, Japan

The Study on Heat Transfer Performance of Thermal Insulation System Applied to the LNG Storage Tank
YoungJun Jung, LNG Engineering Organization; JaeIlk Lee, Trans Gas Solution; HyeonJae Oh, LNG Engineering Organization; JunKee Bang, Trans Gas Solution; KyoungWon Youn, LNG Engineering Organization, Korea

Integrity Management Challenges and Life Extension of Cryogenic above Ground Storage Tanks
Abe Nezamian, Aurecon Group, Australia

A Prismatic Pressure Vessel with Lattice Structure and Applications in LNG Field
Hwalong You, Junkeon Ahn, Choonghee Jo, Pal G Bergan, Daejun Chang, Korea Advanced Inst of Science & Tech, Korea

Development of Lightweight Composite Outer Tank System for Modular Onshore LNG Tank
Dongkyu Shin, Sang Beom Shin, Yoon Yi Hwang, Hyundai Heavy Industries, Korea
Development of Fast Construction Method of LNG Storage Tank Wall Using Permanent Precast Concrete Form
Junhwi Kim, Seul-kee Lee, Kangwon Lee, KOGAS; Sunghyun Oh, Jangheon Engineering & Construction; Hyeoncheol Jo, Yunmook Lim, Yonsei Univ, Korea

39. MECHANICS & RELIABILITY I (V. 4)
Tuesday June 27 08:00 Room 8
Chair: Bor-Feng Peng, Oil Field Development Eng, USA

Statistical Analysis of Ship Accidents between the Three Gorges and Gezhouba Dam
Yue Lei, Shunhuai Chen, Wuhan Univ of Tech, China

Study on Evacuation Traffic Organization for Wharf Yachts Fire Emergency
Yanmin Xu, Jianyu Wang, Fan Yang, Yanmin Xu, Zheng Chang, Wuhan Univ of Tech, China

High-resolution Hydrocode for Simulating Gas Cloud Explosion in Confined Space of the Platform
Xiangshao Kong, Weizheng Xu, Wuhan Univ of Tech, China

Fire Incident Training for Offshore Worker Using Virtual Reality
Minwoo Koo, Sol Ha, Ju-Hwan Cha, Doo-Yeoun Cho, Mokpo National Univ, Korea

Distribution of Temperature Field and Analysis of the Influence of Thermal Stress on the Structure of Chemical Tankers
Pengfei Li, Huilong Ren, Hexing Song, Chuanrui Dong, Harbin Engineering Univ, China

Quantitative Analysis of Hydrocarbon Leaks in Offshore Installations
Huibin Yan, Wenyong Tang, Hongxiang Xue, Shanghai Jiao Tong Univ, China

Optimized Fire Protection for Offshore Topside Structure with 3-Sides PFP Application
Migyeong Kim, Gyusung Kim, Hyundai Heavy Industries, Korea

40. ASSET INTEGRITY IV:
Corrosion 2 (V. 4)
Tuesday June 27 08:00 Room 9
Chair: Antonio Alvaro, SINTEF Materials and Chemistry, Norway

Enhanced Weld Quality of Corrosion Resistance HF-ERW Pipes by Laminar Plasma Shielding Technique
Fumimori Watanabe, Hideki Hamatani, Noboru Hasegawa, Takuya Asano, Keigo Kato, Akira Imanishi, Michitoshi Tanimoto, Koutaro Watanabe, Nippon Steel & Sumitomo Metal, Japan

Numerical Estimation of the Stop Holes - Induced Fatigue Crack Growth Retardation in Offshore Structures Taking into Account the Corrosion Effect
Ove Mikkelsen, Kristen Rege, Tor Hemmingsen, Dimitrios Pavlou, Univ of Stavanger, Norway
Effect of Accumulated Plastic Strain Induced during Reel-Lay Installation on Fracture and Fatigue Behavior of Welded Subsea Pipelines in Acidizing Environment
Yohann Miglis, Technip USA; Ramgopal Thodla, DNV GL; Sam Mishael, Jonathan Bowman, Chevron; Andrea Sajiz, Technical USA; Colum Holtam, DNV GL, USA

Real Offshore Exposure Tests of a Mineral Corrosion Protection System
Christoph Tomann, Tobias Schack, Ludger Lohaus, Leibniz Univ Hannover, Germany

Improving Pipeline Asset Integrity via Pull-Through Pipeline Rehabilitation: A Case Study on Mobile Bay's Experience
Neerav Verma, Alexander C Watts, Timothy D Anderson, ExxonMobil Upstream Research, USA

Comparative Study of Codal Provisions for Cathodic Protection
Anupam Gupta, Technip, USA

Features Description of Shell Surface Microstructure for Marine Antifouling Study
Xiuqin Bai, Xiong Wang, Chengqing Yuan, Wuhan Univ of Tech, China

Study on Antimicrobial Surface Design Using Biological Modification Attempting for Marine Antifouling
Chengqing Yuan, Pan Cao, Xiuqin Bai, Wuhan Univ of Tech, China

41. ARCTIC IV: Ice Mechanics (V.1)
Tuesday | June 27 | 08:00 | Room 10
Chair: Mohamed Sayed, National Research Council, Canada

Numerical Simulation of Failure Progress of Ice Using Smoothed Particle Hydrodynamics
Xing Zheng, Ningbo Zhang, Harbin Engineering Univ, China; Qingwei Ma, City University London, UK

The Effect of Snow on Ice Plate Deflections Generated by Moving Body under an Ice Plate
Alexandra B Pogorelova, Sholom-Aleichem Priamursky State Univ; Victor M Kozin, Inst of Machine & Metallurgy; Vitaliy L Zemlyak, Sholom-Aleichem Priamursky State Univ, Russia

Studies of Specific Energy Fracture of Ice Test Method Using Samples on Uniaxial Compression
Vladimir G Tsuprik, Alexander T Bekker, Egor E Pomnikov, Far Eastern Federal Univ, Russia

Methods of Assessment of Ice-Breaking Capacity of Flexural-Gravity Waves Generated by Moving Loads
Victor Kozin, Inst of Machining & Metallurgy; Vitaliy Zemlyak, Sholom-Aleichem Priamursky State Univ; Elena Rogozhnikova, Anna Matiushina, Amur State Univ of Humanities & Pedagogy, Russia

The Research on Deformed State of Hummocked Ice Caused by Motion of a Submarine Vessel
### Numerical Computations on Higher-Harmonic and Viscous Wave Forces Acting on a TLP in High Waves
B W Nam, Y J Ha, S Y Hong, Korea Research Inst of Ships & Ocean Engineering, Korea

### Numerical Green Water Assessment for an FPSO with Consideration of Nonlinear Effects from Bilge Keel, Spread Mooring and Asymmetric Risers
Shuo Wang, Newcastle Univ, Singapore; Xin Wang, Wai Lok Woo, Newcastle Univ, UK; Tan Hong Seow, Sembcorp Marine, Singapore

### Numerical and Experimental Motion Investigations of a Light Weight Semi-Submersible in Irregular Sea
Yanbin Bai, COTEC Offshore Engineering Services, USA; Haining Lu, Shanghai Jiao Tong Univ, China; John Cheng, Jim Wang, COTEC Offshore Engineering Services, USA

### Motion Trajectory Analysis for an Offshore Floater When Mooring Failures
Yang Yu, Lixin Xu, Tianjin Univ, China

### Mooring Line Top-Tension Prediction Using NARX
Murat Yetkin, Min-Soo Kim, Yooil Kim, Inha Univ, Korea

### Response of Moored Ship in the Waves Generated by Passing Ship
Lilan Zhou, Ji Yang, Keqiang Chen, Jiangtao Qin, Wuhan Univ of Tech, China

### Time Domain Analysis of Side By Side Vessels’ Motion Responses during Offshore Installation and Underway Replenishment
Xi Chen, Renchuan Zhu, Shanghai Jiao Tong Univ, China

### Research on Hydrodynamic Calculation Method of Deepwater CALM Buoy
Wenchi Ni, Zhuang Kang, Cheng Zhang, Xiang Xu, Harbin Engineering Univ, China

### Optimization of Separation Distance between Two Floating Bodies
A P Shashikala, Shankar K Varma, National Inst. of Tech. – Calicut, India
43. SLOSHING V:  
Panel (V. 3)  
Tuesday June 27 10:30 Room 2  

Chair: Yusong Cao, C-Z Marine Technology, USA  
Co-chair: Sa Young Hong, KRISO, Korea  

Panelists  

ITTC Procedure for Sloshing Model Tests [Oral presentation]  
Yonghwan Kim, Sang-Yeol Kim, Seoul National Univ, Korea  

Sloshing Phenomena in Fluid-Structure Interactions [Oral presentation]  
A Baeten, Augsburg Univ of Applied Sciences, Germany  

Sloshing in Aerospace and Defense Industries [Oral presentation]  
Stefan Donauer, Airbus Defence and Space, Germany  

Sloshing in Liquid Hydrogen Vehicles [Oral presentation]  
Haider Iqbal, TI Automotive, Germany  

44. RENEWABLE ENERGY V:  
Ocean Energy & Resources (V. 1)  
Tuesday June 27 10:30 Room 3  

Chair: Sverre K Haver, Univ of Stavanger, Norway  
Co-Chair: Robert L Waid, Marine Development Associates, USA  

Ocean Testing of a Symbiotic Device to Harvest Uranium from Seawater through the Use of Shell Enclosures  
Maha N Haji, Massachusetts Inst of Technology; Jessica Drysdale, Ken Buesseler, Woods Hole Oceanographic Inst; Alexander H Slocum, Massachusetts Inst of Technology, USA  

Influence of Met-Ocean Condition Forecasting Uncertainties and Biases on Weather Window Predictions for Offshore Operations  
Tomas Gintautas, John D Soerensen, Aalborg Univ, Denmark  

Strong El Niño Yields Modest Wave Power  
Robert L Waid, Marine Development Associates, USA  

The Future Northeast Atlantic Wave Energy Potential under Climate Change  
Jelena Janjic, University College Dublin; Sarah Gallagher, Met Eireann; Frederic Dias, University College Dublin, Ireland  

Hydrodynamic Interaction Effects and Performance of an Offshore Wave Farm  
Vasiliki Lamprou, Areti Lioliou, Eva Loukogeorgaki, Aristotle Univ of Thessaloniki, Greece  

Mapping Surface Wind Field Using Transfer Function Analysis  
Sung Yong Kim, KAIST, Korea; Ahsbahs Thobias, Badger Merete, Technical Univ of Denmark, Denmark
Assessment of WRF Prediction of Velocity Profile and Turbulence Intensity by Comparison to Field Measurement
Rohan Kumar, Timothy Stallard, Univ of Manchester, UK

Assessment of Wave Energy Resources on the Coast of China from 35 Years' ERA-Interim Reanalysis Wave Data
Hongyuan Shi, Zaijin You, Ludong Univ; Xuye Lou, National Ocean Technology Center, China

45. SUBSEA, PIPELINES, RISERS II:
Flexible and Umbilical 2 (V. 2)
Tuesday June 27 10:30 Room 4
Chair: Paul Jukes, The Jukes Group, Houston, TX, USA

Thermal Analysis of Power Cables in I-tubes
Kristian T Solheim, Jens K Lervik, SINTEF Energy Research, Norway

Modeling of the Interaction of Subsea Cables and Trawling Fishing Gear Using a Meshfree Method
Yanbin Bai, COTEC; John M Niedzwecj, Texas A&M Univ, USA

Cross-sectional Design and Case Study for an 8 inch Metallic Strips Flexible Pipe
Peihua Han, Shuai Yuan, Yong Bai, Zhejiang Univ, China

Fibre Glass Reinforcement Pipe Under Torsion
Pan Fang, Peihua Han, Zhejiang Univ, China

Research on Thermal and Pressure Cycle Influence of Flexible Pipes
Yuanchao Yin, Qingzhen Lu, Lidong Wang, Jia Zhang, Qianjin Yue, Dalian Univ of Tech, China

Advanced Composite Structures for Subsea Pipeline Design Development
Naveen Ravirala, Paul Jukes, The Jukes Group, USA

On the Stiffener Constraint and Bending Hysteresis Behavior of Offshore Unbonded Composite Risers
Xiaochuan Yu, Yu Cao, Gong Xiang, Univ of New Orleans, USA; Yong Bai, Weidong Ruan, Zhejiang Univ, China

Fatigue Life of Flexible Armor Wires Subject to Corrosion Pitting
Venkat R Krishnan, ExxonMobil Upstream Research; Krassimir Doynov, Wan Kan, ExxonMobil Production; Carl Popelar, Southwest Research Inst, USA

A Simulation-Based Approach to Irregular Wave Wire Stress Computations in Flexible Risers
Arya Majed, Luca Chinello, Nathan Cooke, Xianglei Ni, INTECSEA, USA
**46. HPM II: Advanced Steels 2 (V. 4)**

**Tuesday June 27 10:30 Room 5**

Chair: Murali Manohar, ArcelorMittal, USA  
Co-Chair: Tsunehisa Handa, JFE Steel Corporation, Japan

**Development of High Mn Steel Products for Energy Industries**  
Yumi Ha, Sungkyu Kim, Yongjiin Kim, Unhae Lee, In-shik Suh, and Joo Choi, POSCO, Korea

**Experimental Proof of Brittle Crack Arrestability by Large Scale Structural Model Test Simulating Ultra Large Container Ship**  
Tsunehisa Handa, Satoshi Igi, Tetsuya Tagawa, JFE Steel; Tsutomu Fukui, Nippon Kaiji Kyokai; Shuji Aihara, Univ of Tokyo, Japan

**Development of Seawater Resistant Stainless Clad Steel Plate**  
Yota Kuronuma, Keiichiro Kishi, Hirofumi Otsubo, Shun-ichi Tachibana, Tomoyuki Yokota, Takayuki Kobayashi, Hiroshi, Iizumi, JEF Steel; Takao Kitagawa, JFE Engineering, Japan

**A Numerical Study for the Prediction of Yield Strength of UOE Pipes Considering Flattening Process**  
Jiwoon Yi, Seoul National Univ; Soo-Chang Kang, POSCO; Hyun-Moo Koh, Seoul National Univ, Korea

**Material Design of Hot-rolled Steel Coils for Heavy Wall X70 Spiral Linepipes**  
Junji Shimamura, Shunsuke Toyoda, Satoshi Tsutsumi, JFE Steel, Japan

**Effect of Microstructure on Mechanical Properties of X90 Pipeline Steel**  
Xiang Zhang, Ke Cai, Zhixin Chen, CNPC Tubular Goods Research Inst, China

**47. COASTAL I: Nearshore Hydrodynamics (V. 3)**

**Tuesday June 27 10:30 Room 6**

Chair: P Ruol, University of Padova, Italy  
Co-Chair: Harshimie Karunarathna, Swansea Univ, UK

**Non-linear Navier-Stokes Based Models for the Solution of Coastal Wave Processes**  
Luca Bonfiglio, Massachusetts Inst of Technology, USA; Riccardo Angelini Rota Rosselli, Sapienza Univ of Rome; Giuliano Vernengo, Univ of Genova; Roberto Guercio, Sapienza Univ of Rome, Italy; Chryssostomos Chryssostomidis, Massachusetts Inst of Technology, USA

**An Experimental Study on the Interaction between Oscillatory Flow and Idealized Porous Bed**  
Takaaki Shigematsu, Sota Nakajo, Osaka City Univ; Yuya Okada, Nihon Suido Consultants, Japan

**Large-scale Laboratory Observations of Turbulence and Shear Stress in the Surfzone**  
Wen-Yang Hsu, Zhi-Chen Huang, Ray-Yeng Yang, National Cheng Kung Univ, Taiwan, China; Kuang-an Chang, Byoungjooon Na, Texas A&M Univ, USA; Yang-Yih Chen, National Cheng Kung Univ, Taiwan, China
### Boundary Layer Turbulence of Ocean Current over Coral Reef
Yanhong Li, Shanghai Jiao Tong Univ; Liquan Xie, Tongji Univ, China

### Project of Establishing a Tide Prediction and Observation System for Wharfs of Kinmen & Matzu Harbors around Taiwan Area
Shou-Shiun Lin, Yung-Fang, Chiu, Ministry of Transportation & Communication; Shiahn-Wern Shyue, National Sun Yat-sen Univ; Li-Hung Tsai, Ministry of Transportation & Communication, Taiwan, China

### Computational Modelling of Hydrodynamics of a Proposed Tidal Stream Energy Extraction Site
Harshinie Karunarathna, Swansea Univ; Antonia Chatzirodou, Environment Agency, UK

### The Numerical Investigation of Flow Field of Eastern Coast in Taiwan
Chih-Chung Wen, HungKuang Univ; Hui-Ming Fang, National Taiwan Ocean Univ; Li-Hung Tsai, Inst of Transportation, Taiwan, China

### A Study of Data Complement with Artificial Neural Network Method for Surface Current Mapping Observed by HFSSWR
Wen-Chang Yang, Yi-Chieh Lu, Jian-Wu Lai, National Applied Research Labs, Taiwan, China

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#### 48. OCEAN TECHNOLOGY V: TLP/SPAR/VLFSFPSO 1 (V. 1)

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<th>Tuesday</th>
<th>June 27</th>
<th>10:30</th>
<th>Room 7</th>
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**Chair:** T Mathai, The Glosten Inc, USA  
**Co-chair:** Yongjun Chen, DMAR, USA

### Wind Tunnel Experiment and Numerical Analysis for Current Load Acting on Semi-submersible Platform
Sung-Chul Hwang, Suk-Kyu Cho, Yung-Woo Jung, Hong-Gun Sung, Korea Research Inst of Ships & Ocean Eng, Korea; Alberto O Vazquez-Hernandez, Instituto Mexicano del Petroleo, Mexico

### TLP In-Place Condition Model Tests for the South China Sea Application
Yuanlang Cai, Xiaolong Yang, Junji Li, Anke Song, Lixin Xu, China Offshore Oil Engineering; Haining Lv, Shanghai Jiao Tong Univ, China

### Probability of Slamming Due to Set-Down of Tension Leg Platform
Xiudi Ren, Harbin Engineering Univ, China; Longbin Tao, Newcastle Univ, UK

### Motion Responses and Mooring Line Forces at the Pier for Tension Leg Platform
Gang Chen, Linlin Yan, Hongtao Yuan, Chunhui Li, Yong Yang, Yan Yin, Shanghai Waigaoqiao Shipbuilding, China

### Experimental Study on the Mooring Configurations of the Standby Tunnel-Pontoons System in Hong Kong-Zhuhai-Macau Link Project
Guoxing Huang, Ningchuan Zhang, Yue Song, Yuguo Pei and Zhongan Shao, Dalian Univ of Tech, China

### Heaving Plate Effect on the Hydrodynamic Performance of Semi-submersible FOWT
Kangping Liao, Chunling Zou, Qingwei Ma, Harbin Engineering Univ, China

An Initial Concept Design of Low-Cost Offshore Accommodation Platform
Chao Lu, Yajun Li, Wenwu Zhang, China Ship Development & Design Center, China

49. MECHANICS & RELIABILITY II (V. 4)
Tuesday June 27 10:30 Room 8
Chair: R. Archetti, University of Bologna, Bologna, Italy
Co-Chair:

In the Wake of the Floods Directive: Set-up of Methodologies and Guidelines for Local Administrations to Carry out Hazard and Risk Analysis at Local Scale [Oral presentation]
Marco Bajo, Debora Bellafiore, ISMAR-CNR; Alessandra Boy, ADIS; Maurizio Broccolini, Università Politecnica delle Marche; Antonello Bruschi, Maria Luisa Cassese, Filippo D’Ascola, Pio Di Manna, Francesco Lalli, Iolanda Lisi, ISPRA; Marco Melis, Alessandra Pillai, ADIS; Matteo Postacchini, Università Politecnica delle Marche; Eutizio Vittori, ISPRA, Italy

Pre-Strain Effect on Fracture Performance of TMCP High Strength Steel Welds
Gyubaek An, Jeong-Ung Park, Chosun Univ, Korea; Mituru Ohata, Fumiyoshi Minami, Osaka Univ, Japan

Cracking Analysis of Fracture SIF Assessment
Enqian Liu, Nigel Barltrop, Univ of Strathclyde, UK

Fatigue Reliability Analysis for Mooring Chain of Fish Cages Considering Corrosion Effect
Huimin Hou, Taoqian Xu, Guohai Dong, Yunpeng Zhao, Chunwei Bi, Dalian Univ of Tech, China

Fatigue Strength Assessment on a Floating Process and Supply Basement Based on Equivalent Design Waves
Jingxia Yue, Yulong Guo, Lihua Peng, Wuhan Univ of Tech; Wei Dong, China Ship Development & Design Center; Zheng He, Wuhan Univ, China

Fragility Analysis of a Pier-Supported Wharf
Grace S Wang, Chaoyang Univ of Tech; Fu-Kuo Huang, Tamkang Univ, Taiwan, China

Research on Reliability and Disaster-Causing Mechanism of Mooring System for Semi-Submersible Platform under Extreme Environmental Condition
Xu, Bai, Lei Kong, Jiangsu Univ of Science & Tech, China

Reliability-based Flaw Assessment of a Mooring Chain Using FORM and SORM
Choong-Hyun Lee, Yooil Kim, Inha Univ, Korea
50. GEOTECH I:
Suction Pile (V. 2)
Tuesday June 27 10:30 Room 9

Chair: M S Hossain, Univ of Western Australia, Australia

Effect of Lateral Soil Movement on Piles: An Analysis Prospective
C F Leung, National Univ of Singapore, Singapore; Y Xie, Fugro AG, Australia

The Pullout Resistance of Skirt Suction Anchor in Sandy Soils
Yuki Kasuya, Masato Ito, Hidero Hayashi, Obayashi Co; Naoki Masui, Masui Design Solutions, Japan

Case Study on the Process of Problem Solving in Suction Bucket Foundation Construction
Hyoun Kang, Osoon Kwon, Myunghak Oh, Korea Inst of Ocean Science & Tech, Korea

Undrained Capacity of Suction Piles Subjected to Moment Loading
Saeed Dehghanpoor Abyaneh, Justin Kennedy, Alasdair Maconochie, John Oliphant, Technip UK Limited, UK

Mathieu Instability of Suction Pile Pitch Motion during Hovering Stage Considering Soil-Structure Interaction
Liqing Huang, Fubin Marine Technology; Jun Zhang, Texas A&M Univ; Xiaochuan Yu, Univ of New Orleans, USA; Guanghai Huang, Fubin Marine Technology, China

An Equation of Failure Envelope for Skirted Foundations in Normally Consolidated Clay under Planer Combined Loading
Qinglai Fan, Ludong Univ, China

Suction Buckets Behaviour under Tensile Loads: A Numerical Study with FEM
Paola Dutto, Matthias Baessler, Peter Geissler, Bundesanstalt für Materialforschung und -Prüfung (BAM), Germany

Evaluation of Bearing Capacity of Hybrid Bucket Foundation Using Numerical Analysis and Field Test
Kyu-Yeol Lee, Young-Suk Lee, Jun-Ung You, Dong-Joon Kim, Jae-Hyung Choi, Hyundai E&C, Korea

51. ARCTIC V:
Ice Monitoring (V. 1)
Tuesday June 27 10:30 Room 10

Chair: Ed Ross, ASL Environmental Sciences, Canada
Co-chair: Nataly Marchenko, University Centre in Svalbard, Norway

Ice Drift Tracking Using Photogrammetric Methods on Radar Data
Curtis Holub, Dmitri Matskevitch, Victor Garas Yanni, Svetlana Shafrova, Ted Kokkinis, ExxonMobil Upstream Research, USA

Spatial Variability of Sea Ice Velocity in the Continental Margin of the Canadian Beaufort Sea from a Dense Array of Moored Upward Looking Sonar Instruments
Ed Ross, David B Fissel, Keath Borg, ASL Environmental Sciences, Canada

Why a Warming Chukchi Sea Comes Together with a Cooling Bering Sea in Recent Years?
Qun Zhou, National Marine Environmental Forecasting Center, China

Field Investigation of Sea Spray Particles Impinging on Large Vessels - Case Study of the R/V Mirai
Toshihiro Ozeki, Hokkaido Univ of Education; Shin Toda, Hajime Yamaguchi, Univ of Tokyo, Japan

TUESDAY 13:15

2017 Prof. Jin S. Chung Award Lecture
Tuesday June 27 13:00 Peninsula A
Introduction: Jin S Chung, ISOPE, USA

Two Applications of Nonlinear Wave Mechanics to Coastal Engineering [Oral presentation/To be published in IJOPE]
Chiang C Mei, Massachusetts Inst of Technology, USA

52. HYDRODYNAMICS VI:
Slamming/Whipping/Impact 1 (V. 3)
Tuesday June 27 14:00 Room 1

Chair: F Dias, University College Dublin, Ireland
Co-Chair: C-O Ng, Univ of Hong Kong, Hong Kong, China

Global Design Loads Prone to Whipping and Springing
Yongwon Lee, Nigel White, Zhenhong Wang, Lloyd's Register, UK

Numerical Investigation on Effects of Compressibility on Water Entry Problem
Maria Bihnam, Hao Yang, S Yan, Q W Na, City University London, UK

An Analytical Solution for Small Bending Analysis of Thin Rectangular Plates on Elastic Foundations
Qiang Yu, Shijun Liao, Hang Xu, Shanghai Jiao Tong Univ, China

Study of the 18000 TEU Container Vessel’s Fatigue Strength under Influences of Springing Phenomenon
Penghao Shan, Marine Design and Research Inst of China; Jiameng Wu, Shanghai Jiao Tong Univ; Shijian Cai, Marine Design & Research Inst of China, China

Wave Loading on Flexible Offshore Structures
Arman Ghezelbashan, Cedric D’Mello, City University London, UK

Fully Nonlinear Simulation of Ringing of a Two Dimensional Barge in Focused Waves
Binzhen Zhou, Harbin Engineering Univ; Jianghui Qi, Wuhan Haiwang Technologies; Liang Zhang, Jing Geng, Harbin Engineering Univ, China
Vertical Water Entry of a Cone under the Condition of Free Fall Motion
Shili Sun, Jian Hu, Qianqi Han, Harbin Engineering Univ, China

53. HYDRODYNAMICS VII:
Wave Mechanics 1 (V. 3)
Tuesday June 27 14:00 Room 2
Chair: Ray-Yeng Yang, National Cheng Kung Univ, Taiwan
Co-Chair: Ching-Piao Tsai, National Chung Hsing Univ, Taiwan, China

Rogue Waves in Crossing Sea States
Hiu Ning Chan, Kwok Wing Chow, Univ of Hong Kong, China

Numerical Simulation of Freak Waves in Random Wave Field
Lei Wang, Jinxuan Li, Shuxue Liu, Dalian Univ of Tech, China

A Pseudo-Spectral Method for Extreme Storm Waves
Nicole Beisiegel, Frederic Dias, University College Dublin, Ireland

Numerical and Experimental Investigation of Extreme Events in JONSWAP Seas
Guillaume Ducrozet, Ecole Centrale de Nante, France; Alessandro Toffoli, Unin of Melbourne, Australia; Amin Chabchoub, Aalto Univ, Finland;

Focused Waves on Depth-Varying Currents: The Role of Vorticity
Magnus Beyer, Chris Swan, Marios Christou, Imperial College London, UK

Water Wave Problems in a Sloping Seabed Environment
Aichun Feng, Allan R Magee, National Univ of Singapore, Singapore

Numerical Investigation of Bed Stress under Plunging Breaker on a Sloping Beach
Lian Tang, Onyx W H Wai, Hong Kong Polytechnic Univ, China

54. RENEWABLE ENERGY VI:
Tidal & Current Energy (V. 1)
Tuesday June 27 14:00 Room 3
Chair: Wojciech Popko, Fraunhofer IWES, Germany
Co-Chair: Fabian F Wendt, National Renewable Energy Lab, USA

Operational Loads on a Tidal Turbine Due to Environmental Conditions
Hannah R Mullings, Tim Stallard, Univ of Manchester; Gregory S Payne, Univ of Edinburgh, UK

Performance of Vertical-Axis Tidal Turbines with Different Variable Pitch Control Strategies
Bing Chen, Dalian Univ of Tech, China

Numerical Study on Power Balancing of Front and Rear Hydrofoils in Dual Configuration of a Flapping-Type Tidal Energy Harvester
Jin Hwan Ko, Patar E Sitorus, Be Reum Won, Korea Inst of Ocean Science & Tech, Korea

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On Interaction between Free Surface and Tidal Current Turbines  
Xiaoxian Guo, Jianmin Yang, Haining Lu, Shanghai Jiao Tong Univ, China

Experimental Investigation of Hydrodynamic Performance of a Horizontal Axis Tidal Stream Turbine  
Jisheng Zhang, Jiekang Gu, Yunxiu Cao, Hohai Univ, China

Development of a Pitch Controller via Multiple-step Experiments of Scale Models of a Horizontal Axis Tidal Current Turbine  
Jin Hwan Ko, Jihoon Kim, Hyeju Park, Bo Reum Won, Patar E Sitorus, Jin-Soon Park, Kwang-Soo Lee, Korea Inst of Ocean Science & Tech; Taesam Kang, Hoon Cheol Park, Konkuk Univ, Korea

Developing a Method for Multi-scale Modelling of Tidal Farms to Enable Grid Integration  
Christoph Hachmann, Tim Stallard, Univ of Manchester, UK

Power Generation by Counter-Rotating Type Tidal Stream Power Unit  
Toshiaki Kanemoto, Saga Univ; Ryunosuke Kawashima, EIM Electric; Isao Samura, Kazuo Kuwano, Kyowa Engineering Consultants, Japan

Performance of Tandem Propellers Counter-Rotating Obliquely to Tidal Stream  
Toshiaki Kanemoto, Saga Univ; Nak-Joong Lee, Kyushu Inst of Tech; Kazuo Kuwano, Isao Samura, Kyuwa Engineering Consultants, Japan

55. SUBSEA, PIPELINES, RISERS III:  
Riser Design I (V. 2)  
Tuesday June 27 14:00 Room 4

Chair: A. Majed, IntecSea Inc., USA

Three-dimensional Soil-SCR Interaction Research Combined with Global SCR Behavior Analysis  
Junhwan Choi, Beom-Seon Jang, Jeong Du Kim, Seoul National Univ, Korea; Youngho Kim, Muhammad S Hossain, Univ of Western Australia, Australia

The Penetration of Steel Catenary Risers into the Seabed and Its Impact on Fatigue Life in Touchdown  
Hodjat Shiri, Rahim Shoghi, Memorial Univ of Newfoundland, Canada

Weak Point and Operation Analysis of Deepwater Drilling Riser System in Typhoon Condition  
Xiuquan Liu, Guoming Chen, Jingjie Fu, Shenyan Zhang, Yuanjiang Chang, Kang Liu, China Univ of Petroleum-Qingdao, China

Dynamics of 3D Beams with Geometric Nonlinearity in Fluids  
Anastasia Tsolaridou, Demos C Angelides, Aristotle Univ of Thessaloniki, Greece

An Alternative Methodology for Static 3D Nonlinear Hanging Mooring Lines Analysis  
Florian Surmont, Thomas Gazzola, Damien Coache, Cedric Brun, Sebastien Martin, Bureau Veritas, France
56. HPM III: Advance in Welding 1 (V. 4)

Tuesday June 27 14:00 Room 5

Chair: JongSub Lee, POSCO, Korea

Thermal Analysis of Girth Welded Joints of Dissimilar Metals in Clad Pipes; Experimental and Numerical Analysis
Bridget Enoba Kogo, Bin Wang, Luiz Wrobel, Mahmoud Chizari, Brunel Univ London, UK

Usability of Laser-TIG Hybrid Welding Processes
Martin A Kesse, Paul Kah, Emmanuel A Gyasi, Lappeenranta Univ of Technology, Finland

The Effect of Initial Stress During the Steel Manufacturing Process on the Welding Residual Stress in Extra Thick Welding
JeongUng Park, Gyubaek An, Chosun Univ; Wanchuck Woo, KAERI, Korea

Welding Consumable Development for a New Erosion Resistant Steel [Oral presentation]
X Yue, A J Wasson, T D Anderson, D P Fairchild, ExxonMobil Upstream Research; N Ma, ExxonMobil Research & Engineering, USA

Arc Behavior in Four Electrodes Submerged-Arc Welding
Shohei Kozuki, Naoya Hayakawa, Rinsei Ikeda, JFE Steel, Japan

Penetration and Quality Control with Artificial Neural Network Welding System
Sakari Penttä, Paul Kah, Lappeenranta Univ of Technology, Finland

Cross-weld Tensile Strength of Aluminum Alloys EN AW 5083 and 6082
Bard Nyhus, Stephane Dumoulin, Hekon Nordhagen, SINTEF Materials and Chemistry; Ole T Midling, Marine Aluminium a.s; Ole R Myhr, Hydro Aluminium; Trond Furu, Norsk Hydro, Norway

Research on the Electromagnetic Force Assisted Line Heating for Aluminum Alloy Ship Hull Plate
Ji Wang, Zhonghe Li, Jiangtao Wu, Dalian Univ of Tech, China

KEYNOTE

Wednesday June 28 14:00 Room 6

Introduction: Demos C Angelides, Aristotle Univ of Thessaloniki, Greece

Morison Equation in Practice and Validity
Jin S Chung, ISOPE, USA
57. COASTAL I:
Nearshore Hydrodynamics (V. 3)
Tuesday June 27 14:00 Room 6
Chair: P Ruol, University of Padova, Italy
Co-Chair: Harshinie Karunarathna, Swansea Univ, UK

58. OCEAN TECHNOLOGY VI:
TLP/SPAR/VLFSFPSO 2 (V. 1)
Tuesday June 27 14:00 Room 7
Chair: Partha Sharma, DNVGL, USA
Co-Chair: J F Wu, American Bureau of Shipping, Singapore

The Hydrodynamic Performance Analysis of a VLFS with Tension Leg Mooring System in Shallow Water by Time Domain Simulation
Yiting Wang, Xuefeng Wang, Shengwen Xu, Lei Wang, Jun Li, Xin Li, Shanghai Jiao Tong Univ, China

Motion Analysis of a VLFS's Single Module with Taut Mooring System over Slope Seabed in Shallow Water
Jianfeng Xu, Shanghai Jiao Tong Univ, China

OPTI® Series Semi-Submersibles Airgap Calculation Using Frequency Domain and Time Domain Methods
Zhigang Tian, Branka Radanovic, Otto DaSilva, Exmar Offshore, USA

Wind and Waves Induced Dynamic Effects of a Semi-submersible Platform
Jin Ma, Dai Zhou, Zhaolong Han, Shanghai Jiao Tong Univ, China

Hydrodynamic Performance of the Semi-Submersible Platform with Multiple Small Columns
Xiancang Song, Shuqing Wang, Ocean Univ of China; Yu Zhang, Qingdao Vocational & Tech College of Hotel Management, China

Dynamic Response of Submerged Floating Tunnel Subjected to Extreme Waves and Seismic Conditions
Dong-Ho Choi, Naik Muhammad, Zahid Ullah, Hanyang Univ, Korea

Frequency Domain Analysis of a Novel Multiple-Column Semi-Submersible Platform Concept
Song Gao, Yufeng Kou, Shanghai Jiao Tong Univ, China

Study on the FEM Analysis of Mooring Line for Floating Multibody System
Do-II Jeong, Seong-Hyun Shin, Namkug Ku, Dong-Eui Univ, Korea

59. MECHANICS & RELIABILITY III (V. 4)
Tuesday June 27 14:00 Room 8
Chair: Beom-Seon Jang, Seoul National University, Korea

3D Navigation Support System for Ship Evacuation in a Natural Disaster
Xinjia Gao, Hidenari Makino, Osaka Univ, Japan

A Study of Key Influencing Factors in Ultimate Strength Analysis for Container Ships
Jinju Cui, Deyu Wang, Ning Ma, Shanghai Jiao Tong Univ, China

Research on the Risk Identification of Ro-Ro Passenger Ship’s Navigation based on the Brittle Link Theory
Mengyu Wang, Guoping Guo, Wuhan Univ of Tech, China

Risk Assessment for 400,000-DWT Carrier Entry into DONGJIAKOU Port
Hongdi Zhao, Jingxian Liu, Yi Liu, Cunbao Tang, Wuhan Univ of Tech, China

Analysis of Influencing Factors of Marine Traffic Accidents Based on LIBSVM
Feixiang Wang, Yadong Yang, Hao Wang, Wuhan Univ of Tech; Xiaojun Weng, Shanghai Maritime Safety Administration, China

Safety of Jacket to Resistant Extreme Wave Environment Evaluation while the Jacket Experienced 1000 Year Return Period Earthquake
Weidong Shao, CNOOC Research Inst; Han Cao, China Ship Design & Research Ctr; Xu Jia, Liqin Wang, Dianfu Fu, CNOOC Research Inst, China

60. GEOTECH II: Anchor and Pipelines (V. 2)
Tuesday June 27 14:00 Room 9

Chair: Yun Wook Choo, Kongju National Univ, Korea

Effective Stress Analysis of a Dynamically Installed Anchor Penetrating into Rate-Dependent Soil
K Chang, D Wang, M S Hossain, Univ of Western Australia, Australia

Experimental and Analytical Studies on the Holding Capacity of Hall Anchors during Pulling in Sand
Yuxiao Ren, Shuwang Yan, Liqiang Sun, Yandi Wang, Tianjin Univ; Bingchuan Guo, CCCC First Harbor Eng; Zhenming Lei, COOEC, China

Physical Modelling Fixed Fluke Drag Embedded Anchor in Transparent Soils
Chunhui Zhang, Hebei Univ of Science & Tech, China

Suction Embedded Plate Anchor (SEPLA): Keying Effect
Zahra Aghazadeh Ardebili, AECOM; M A Gabr, M S Rahman, North Carolina State Univ, USA

The Study of Horizontal Bearing Capacity of Gravity Anchor on Calcareous Soil with Centrifugal Model Tests
Huailiang Li, CNOOC; Sa Li, Jiangsong Yin, Tianjin Univ; Shantian Huang, Xiaofei Wang, CNOOC, China

Pipe-Seabed Interaction under Lateral Motion
H. Sabetamal, J P Carter, S W Sloan, Univ of Newcastle, Australia

Axial-Vertical Interaction Behavior of Buried Pipelines in Dense Sand
Effect of Near-Surface Crustal Layers on the Vertical Penetration Response of Subsea Pipelines
Bithin Ghoral, Santiram Chatterjee, IIT Bombay, India

Development of a Framework for Flotation Mitigation of Pipelines and Cables in Fine Grained Soils
Tommaso Bizzotto, Michael Brown, Univ of Dundee; Toby Powell, Subsea7; Andrew Brennan, Univ of Dundee; Howard Chandler, Aberdeen Univ, UK

61. ARCTIC VI: Safety in Arctic Operations (V. 1)
Tuesday June 27 14:00 Room 10

Chair: Dmitri Matskevich, ExxonMobil Upstream Research Co., USA
Co-chair: Teemu J Heinonen, Aker Arctic Technology, Finland

Polar Navigation Compass Error Analysis and Compensation Method
Shenlong Chen, Jianhua Wu, Wen Liu, Junwei Guo, Chen Wu, Wuhan Univ of Tech, China

Impacts of Emergency Response Systems in the Arctic According to Degrees of Military/Civilian and Professional/Volunteer Design
Uffe Jakobsen, Univ of Copenhagen, Denmark

Large-scale Oil Spill Emergencies in the Arctic and the Demand for Management Competence within Emergency Preparedness Institutions
Natalia Andreassen, Odd Jarl Borch, Nord Univ; Nataly Marchenko, University Centre in Svalbard, Norway; Svetlana Kuznetsova, Northern Arctic Federal Univ, Russia; Johannes Schmied, Ensieh K P Roud, Nord Univ, Norway

Providing Performance Stability to Interdependent Arctic Critical Infrastructures
Svetlana Y Kutsenko, Vladimir Pavlenko, Svyatoslav A Timashev, Federal Research Center for Integrated Arctic Research, RAS, Russia

Several Effective Methods for Improving the Working Efficiency of a Ship Weather Routing System
Tong Cui, Osman Turan, Evangelos Boulougouris, Univ of Strathclyde, UK

Fire Safety Aspects for Underwater Tunnels in Cold Climate
Yonas Z Ayele, Sondre F Jensen, Abbas Barabadi, UiT The Arctic Univ of Norway, Norway
62. HYDRODYNAMICS VIII:
Slamming/Whipping/Impact 2 (V. 3)
Tuesday June 27 16:20 Room 1

Chair: Benlong Wang, Shanghai Jiao Tong Univ, China

Wave Interaction with a Floating Elastic Plate in the Presence of a Submerged Porous Plate
Chiu-On Ng, Univ of Hong Kong, China; Harekrushna Behera, SRM Univ, India

FSI Analysis of Solitary Wave Interacting with Horizontal Flexible Plate by MPS-FEM Method
Chengping Rao, Youlin Zhang, Decheng Wan, Shanghai Jiao Tong Univ, China

The Dynamic Response of the Large Containership's Bow Structure under Slamming Pressures
Deyu Wang, Bin Yang, Shanghai Jiao Tong Univ, China

A Method to Measure Wave Impact Force and Its Validation
Yinghao Guo, Longfei Xiao, Yufeng Kou, Guocheng Zhao, Shanghai Jiao Tong Univ, China

Numerical Simulation of Water Ditching of an Airplane by a Two-Phase Solver
Bin Wu, China Special Vehicle Research Inst; Min Yu, Tingqiu Li, Wuhan Univ of Tech, China

Numerical Simulation of Water Entry of Twin Wedges Using a CIP-Based Method
Zijun Hu, Xizeng Zhao, Du Cheng, Dake Zhang, Zhejiang Univ, China

Numerical Simulation of Free Surface Impact on a Vertical Cylinder Using UMTHINC
Mohamed M Kamra, Changhong Hu, Kyushu Univ, Japan

63. HYDRODYNAMICS IX:
Wave Mechanics 2 (V. 3)
Tuesday June 27 16:20 Room 2

Chair: Sa Youn Hong, KRISO, Korea

A Flux-Limiter Weighted High-Resolution Conservation Algorithm
Fang Li, Tingqiu Li, Wuhan Univ of Tech, China

Assessment of the Capability of the Nonlinear Schrodinger Equation and the High-order Spectral Method to Simulate Propagation of Random Waves
Weida Xia, Yuxiang Ma, Guohai Dong, Xiaozhou Ma, Dalian Univ of Tech, China

Numerical Simulation of Solitary-Wave Scattering and Damping in Fragmented Sea Ice
Philippe Guyenne, Univ of Delaware, USA; Emilian I Parau, Univ of East Anglia, UK

Experimental Study on the Evolution of the Peregrine Type Surface Gravity Waves in Finite Water Depth
Yuxiang Ma, Yongbo Song, Bo Liao, Guohai Dong, Xiaozhou Ma, Dalian Univ of Tech, China

Computation of Axisymmetric Gravity Currents
Yosuke Sawano, Hiroya Tsugawa, Baba Nobuhiro, Osaka Prefecture Univ, Japan

Numerical Investigation of Crest-Height Statistics in Deep Water
Demetris Hadjigeorgiou, Chris Swan, Marios Christou, Imperial College London, UK

Numerical Simulation of Infragravity Wave Motion over Fringing Reefs Using a Shock-Capturing Boussinesq Model
Kezhao Fang, Dalian Univ of Tech; Zhongbo Liu, Dalian Maritime Univ; Shufeng Cheng, Dalian Univ of Tech, China

64. RENEWABLE ENERGY VII: Offshore Wind Structures 1 (V. 1)
Tuesday June 27 16:20 Room 3

Identification of Critical Design Load Cases for Jacket Supported Offshore Wind Turbine
Shaofeng Wang, Torben J Larsen, Techcnial Univ of Denmark, Denmark

Efficient Fatigue Limit State Design Load Sets for Jacket Substructures Considering Probability Distributions of Environmental States
Jan Haefele, Cristian G Gebhardt, Raimund Rolfes, Leibniz Univ Hannover, Germany

Influence of Structural Redundancy on Fatigue Life of Offshore Wind Turbine Jackets
Milan Kovarbasic, Fabian Vorpahl, Senvion GmbH, Germany

Fatigue Analysis of Jacket-Type Support Structure for Offshore Wind Turbine under Local Environmental Conditions in Taiwan
Ting-Yu Fan, Tung-Liang Chu, Chin-Cheng Huang, Inst of Nuclear Energy Research, Taiwan, China

Numerical Fatigue Analysis of Tubular Joints of Support Structures for Offshore Wind Turbines [Oral presentation]
Gongalo T Ferraz, Ana Glisic, Perer Schaumann, Leibniz Univ Hannover, Germany

Sensitivity Study on a 3D Numerical Model for Estimating Breaking Wave Forces on a Jacket Structure
Jithin Jose, Univ of Stavanger; Sung-Jin Choi, DNV GL, Denmark; Ove T Gudmestad, Univ of Stavanger, Norway

On the Dynamic Response of Offshore Fixed-bottom Wind Turbines in Rough Sea [Oral presentation]
Agota Mockute, Alessandro Giusti, Enzo Marino, Claudio Borri, Univ of Florence, Italy
Design of a New Composite Wind Turbine Foundation Combining the Jacket and Mono-Pile Foundations
Hongyan Ding, Xuyue Wang, Puyang Zhangm Tianjin Univ, China

65. SUBSEA, PIPELINES, RISERS IV:
Riser Design 2 (V. 2)
Tuesday June 27 16:20 Room 4
Chair: Howard H. Wang, ExxonMobil Production Co., USA

An FEA Based Methodology for Assessing the Residual Strength of Degraded Mooring Chains
Justin M Crapps, Haiping He, David A Baker, ExxonMobil Upstream Research, USA

Probabilistic Operability Analysis of Drilling Riser by Metamodel Methodology
Hezhen Yang, Chan Ghee Koh, Ying Min Low, Xiaodong Zhang, National Univ of Singapore; Peter F B Adaikalarajb, Keppel Offshore & Marine Tech Center, Singapore

Direct Numerical Simulation of the Flow past a Stationary Catenary Riser at Low Reynolds Number
H B Zhu, D Zhou, Y Bao, R Wang, Z L Han, Shanghai Jiao Tong Univ, China

Static and Dynamic Behaviors of a SCR Clamp under Fatigue Loads in Deep Water Installation
David Y Du, Victor Acevedo, Sanjay Parikh, Ramdane Hamadi, Subsea 7, USA

Fatigue Assessment of Fixed Platform Riser Clamps
Parag S Nimse, Wood Group, USA

The Pig Gravity Impact on its Frictional Force in Oil and Gas Pipeline
Xiaoxiao Zhu, Wei Wang, Shimin Zhang, Shuhai Liu, China Univ of Petroleum-Beijing, China

66. HPM IV:
Advances in Welding 2 (V. 4)
Tuesday June 27 16:20 Room 5
Chair: Doug Fairchild, ExxonMobil Upstream Research, USA

Approaches for Underwater Welding Control to Achieve Quality Welds
Paul Kah, Pavel Layus, Lappeenranta Univ of Technology, Finland; Joshua Omajene, Federal Univ of Petroleum Resources Effurun, Nigeria; Sergey Parshin, Sergey Maystro, Peter the Great St. Petersburg Polytechnic Univ, Russia

Effect of Consumable Filler Wire Composition to Mismatches of High-Mn Steels Welded Joints
Belinga Mvola, Paul Kah, Lappeenranta Univ of Technology, Finland

New Nano-Coated Welding Wire for Ultra-High-Strength Steel (S960QC) and MAG Robotized Welding in Arctic Offshore Construction
Xiaochen Yang, Paul Kah, Lappeenranta Univ of Technology, Finland

Submerged Arc Welding Process Productivity in Welding Thick High Strength Steel Plates Used for Arctic Applications
Pavel Layus, Paul Kah, Lappeenranta Univ of Technology, Finland

Effectiveness and Development of an Optimum Helium Blend for Welding High-Performance Steels
Paul Kah, Kalevi Korjala, Belinga Mvola, Jukka Martikainen, Lappeenranta Univ of Technology, Finland

Microstructure and Hardness of Welded Layer with Crystallographic Orientation of Solidification Structure in Multipass Weld Using High Mn-Ni Flux Cored Wire
Il-Wook Han, Bong-Guen Lee, POSCO; Jung-Bok Eom, Chung-Yun Kang, Pusan National Univ, Korea

Development of a New Optical Monitoring System for Producing Advanced HF-ERW Pipes Using Plasma Shielding Technique
Noboru Hasegawa, Yoshifumi Karube, Hideki Hamatani, Fuminori Watanabe, Michitoshi Tanimoto, Nippon Steel & Sumitomo Metal, Japan

67. COASTAL II:
Coastal Wave Mechanics 1 (V. 3)
Tuesday June 27 16:20 Room 6

Chair: A. Khayyer, Kyoto University, Japan
Co-Chair: Luca Matinelli, University of Padova, Italy

2D versus 1D Models for Shallow Water Equations
Florent Chazel, Jean-Paul Vila, Pascal Noble, INSA Toulouse, France

Parallel Three-Dimensional Non-Hydrostatic Model for Predicting Water Wave Motions
Congfang Ai, Sheng Jin, Dalian Univ of Tech, China

A Flexible 2D Nonlinear Approach for Nonlinear Wave Propagation, Breaking and Runup
Mario Ricchiuto, Andrea G. Filippini, Maria Kazolea, INRIA Bordeaux Sud-Ouest, France

An Efficiency Test on Generation of Transformed Multi-directional Waves in Experimental Basin
Katsuya Hiyarama, Yasuhiro Aida, Akinorir Nakamura, Port and Airport Research Inst, Japan

Experimental Study of the Wave Attenuation Characteristics over Muddy Bed and Fluid Mud
Mingxiao Xie, Zhiwen Yang, Xin Li, Tianjin Research Inst of Water Transport Engineering, China

Experimental Study on Waves Propagation and Deformation over Steep Reef in Larger Scale Wave Flume
Songgui Chen, Hanbao Chen, Tianjin Research Inst of Water Transport Eng; Jinhai Zheng, Hohai Univ, China
68. OCEAN TECHNOLOGY VII:  
TLP/SPAR/VLFS/FPSO 3 (V. 1)  
Tuesday  June 27  16:20  Room 7

Chair: Xiaochuan Yu, Univ of New Orleans, USA

Numerical Modeling of Large Stretching Line Structures Using ANCF  
Keh-Han Wang, Fangfang Sheng, Univ of Houston; Zhengyong Zhong, FloaTEC, USA

Estimation of Fatigue Loads for Floaters in Extreme Seas  
Abhilash Somayajula, Jeffrey Falzarano, Texas A&M Univ; Brian Healy, Srinivas Vishnubhotla, Partha Sharma, DNV GL, USA

Clam Buoy and Fluid Transfer System Study  
Xiaoliang Qi, Gang Xu, Quan Yuanm Yongjun Chenm Kevin Huang, DMAR, China

Experimental Investigation on the Hydrodynamic Performances of a Light Weight Semi-Submersible FPS with Three Columns  
Wen Yue Lu, Haining Lu, Shanghai Jiao Tong Univ; Yanbing Bai, Jin Wang, COTECH Offshore Engineering Services, China

Coupled Versus Separate Analysis for Floating Body and Mooring Lines  
Byoung Wan Kim, Hong Gun Sung, Sa Young Hong, Korea Research Inst of Ships & Ocean Engineering, Korea

69. ADVANCED SHIP TECH I:  
Ship Design & Production 1 (V. 4)  
Tuesday  June 27  16:20  Room 8

Chair: Suak Ho Van, Korea Research Inst of Ships & Ocean Engineering, Korea

A Layout Design Framework Considering Relationships between Internal Space and External Shape of Naval Vessels at the Conceptual Design Phase  
Yong-Kuk Jeong, Su Heon Ju, Seunghyeok Son, Young Gi Min, Jong-Gye Shin, Seoul National Univ; JongChul Kim, Agency for Defence Development; Jong Hun Woo, Korea Maritime & Ocean Univ; Philippe Lee, Xinnos Corp, Korea

Design of an Integrated Production Planning System Framework Based on Simulation Using a Production Information Model  
Huiqiang Shen, SeungHoon Nam, SuHeon Ju, Jong Gye Shin, Seoul Nationa l Univ; Philippe Lee, Xinnos Co; Jong Hoon Woo, Korea Maritime & Ocean Univ, Korea

A Study on Minimum Weight Design of Corrugated Bulkheads for Chemical Tankers  
Sang-Hoon Shin, Jun-Seok Park, Hyundai Heavy Industries, Korea

Numerical Simulation on Bending Forming of Angle Section for Shipbuilding  
Yong Hu, Ziyan Fan, Kangkai Hong, Xuezhu Zhou, Wuhan Univ of Tech, China

Buckling Optimization of Laminated Truncated Conical Shells Subjected to Hydrostatic Pressure  
Hsuan-Teh Hu, Hsien-Chih Chen, National Cheng Kung Univ, Taiwan, China
Numerical Analysis of Composite Sandwich Plate Fastened with Single Countersunk Bolt
Yaoyu Hu, Renjun Yan, Wuhan Univ of Tech; Xiaoliang Chen, Nantong COSCO KHI Ship Engineering; Kai Qin, Haiyan Zeng, Wuhan Univ of Tech, China

Free Vibration Analysis of Submerged Finite Elliptic Cylindrical Shell with Ring Stiffeners
Xiang Zhu, Min Fang, Tianyun Li, Chaochao Jin, Huazhong Univ of Science & Tech, China

Fishing Vessels Real-Time Onboard Stability Guidance
Vicente Diaz-Casas, Lucia Santiago-Caamano, Marcos Miguez-Gonzalez, Univ of Coruña, Spain

70. GEOTECH III:
Soil-Structure-Fluid Interactions (V. 2)
Tuesday June 27 16:20 Room 9
Chair: H. Arslan, ExxonMobil Production Company, USA

Effects of New Technique of Large Diameter Monopile Installation in the North Sea
Ivana Anusic, Gudmund R Eiksund, NTNU; Morten A Lingaard, Sandra Meissl, DONG Energy, Denmark

Assessment of Seafloor Stability and Foundation Performance under Wave Action
Xiaoyan Long, Ko-Min Tjok, Fugro Marine GeoService, USA

Effective Stress Response of Stratified Seabed to Sea Wave Loading Calculated by Means of Formula Solution with u-w-p Modeling
Anh Quang Tran, Kinya Miura, Tatsuya Matsuda, Takahito Yoshino, Toyohashi Univ of Tech, Japan

Wave-induced Destabilization of Seabed Regarding the Combined Effect of Flow Velocity and Water Pressure Change
Kinya Miura, Toyohashi Univ of Tech; Natsuhiko Otsuka, Hokkaido Univ; Shingo Morimasa, Nagasaki Univ; Tatsuya Matsuda, Takahito Yoshino, Toyohashi Univ of Tech, Japan

Dynamic Responses of a Submerged Floating Tunnel in Survival Wave and Seismic Excitations
M H Kim, C K Jin, J Y Lee, Texas A&M Univ, USA

Analysis of Dynamic Response of a Caisson Type Gravity Quay Wall – Seabed Soil System under Waves
Hasan Giray Baksi, YBT Structural Design Services; Mehmet B C Ulker, Istanbul Technical Univ, Turkey

Experimental Research and Scour Analysis of Subsea Foundation
Fei Wu, CNOOC Research Inst, China

Undrained Bearing Capacity of Circular Foundations on Two-layered Clay under Combined Loading
Joon Kyu Lee, Univ of Seoul, Korea; Junyoung Ko, Texas Tech Univ, USA
### 71. ARCTIC VII: Ships in Ice (V. 1)

**Tuesday June 27 16:20 Room 10**

**Chair:** V Pavlenko, RAS Arkhangelsk Scientific Center, Arkhangelsk, Russia

**Numerical Calculation of Propeller Strength in Ice Milling Condition**
Liyu Ye, Chao Wang, Hongyu Zhang, Shuai Sun, Harbin Engineering Univ, China

**Transient Torsional Analysis of Polar Class Vessel Shafting Systems Using a Lumped Model and Finite Element Analysis**
Giorgio Burella, Lorenzo Moro, Memorial Univ of Newfoundland, Canada

**Alternative Winterization Design Philosophy for Ships Operating in Polar Waters**
Tommi Heikkilä, Esa Hakanen, Aker Arctic Technology, Finland

**Study on Test Methods of Winterization Performance for Ship Equipment**
Seong-Rak Cho, Eun-Jin Oh, Kuk-Jin Kang, Korea Research Inst of Ships & Ocean Eng, Korea

**Full-scale Measurements and Observations of Icebreaking Notch Towing Operations**
Teemu J Heinonen, Veikko E Immonen, Aker Arctic Technology, Finland

**Discrete Element Simulation of Ship Breaking Through Ice Ridges**
Quentin Hisette, Aleksei Alekseev, Johannes Seidel, HSV A, Germany

**Model Tests for the Development of Low Ice Class Propeller-hull Concepts**
Joris Brouwer, Gerco P J Hagesteijn, MARIN, Netherlands

**A Design Approach for an Icebreaker Based on Model Tests [Proceedings only]**
Konstantin V. Kurchukov, Alexey A. Dobrodeev, Maxim V. Renny, Dmitriy V. Fomichev, Ekaterina A. Morozova, Krylov State Research Center, Russia

### WEDNESDAY 08:00

**KEYNOTE**

**Wednesday June 28 08:00 Room 1**

**Introduction:** André Baeten, Augsburg Univ of Applied Sciences, Germany

**Slamming: Recent Progress in the Evaluation of Impact Pressures [Oral presentation]**
Frederic Dias, University College Dublin, Ireland; Jean-Michel Ghidaglia, ENS Cachan, France
72. HYDRODYNAMICS X:
Slamming/Whipping/Impact 3 (V. 3)
Wednesday June 28 08:00 Room 1

Chair: Tsung-Chow Su, Florida Atlantic Univ, USA
Co-Chair: YB Lee, Daewoo Shipbldg & Marine Eng, Korea

Green Water on a Fixed Model in a Large Wave Basin: Flow Velocity, Void Fraction, and Impact Pressure Distributions
Wei-Liang Chuang, Kuang-An Chang, Richard Mercier, Texas A&M Univ, USA

Aeration Effects on Hydrodynamic Loads of Circular Cylinder's High-Speed Water Entry
Benlong Wang, Yao Hong, Hua Liu, Shanghai Jiao Tong Univ, China

Nonlinear Analysis of Green Water Impact on Wigley Hull with Forward Speed
Guanghua He, Zihao Zhang, Xhengke Wang, Xiaotong Yang, Harbin Inst of Tech, China

A Method to Predict Slamming Pressure Based on the Relative Motion of Ship and Waves
Hui Li, Qiang Huang, Kaihong Zhang, Yakang Peng, Huilong Ren, Harbin Engineering Univ, China

73. HYDRODYNAMICS XI:
Wave Mechanics 3 (V. 3)
Wednesday June 28 08:00 Room 2

Chair: Bin Teng, Dalian Univ of Technology, China

Numerical Investigation of a Novel Wave Absorbing Method by Gap Resonance
Lin Lu, Zhiwei Song, Dalian Univ of Tech; Rui Gao, Lizhi Tang, Offshore Engineering Inst; Zhongbing Zhou, Chunyang Liu, Dalian Univ of Tech, China

Direct Simulation of Ocean Hydro-acoustic Waves with the Lattice Boltzmann Method
Pietro Prestininzi, Univ Roma Tre, Italy; James T Kirby, Univ of Delaware, USA; Andrea Montessori, Michele La Rocca, Univ Rome Tre, Italy; Ali Abdolali, Univ of Delaware, USA

Streamfunction Embedment into Linear Irregular Seas: A New Method Based on the Hilbert Transform
Fabio Pierella, Luca Oggiano, Jacobus De Vaal, Roy Stenbro, Tor Anders Nyggard, Inst for Energy Technology (IFE); Jorgen Krokstad, Fugro Oceanor, Norway; Henrik Bredmose, DTU, Denmark

Numerical Study on the Character of Wave Attenuation
Gang Xu, Edmond B Kenmeni, Jing Chen, Jiangsu Univ of Science & Tech, China

Experiments on Spontaneous Modulation Instability in Hydrodynamics
Amin Chabchoub, Aalto Univ; Goery Genty, Tampere Univ of Tech, Finland; John M. Dudley, Univ de Franche-Comte; Bertrand Kibler, Univ de Bourgogne, France; Takuji Waseda, Univ of Tokyo, Japan
Investigation on the Gravity Collapse in Density Stratified Fluid
Gang Wei, Hui Du, Junling Wu, PLA Univ of Science & Tech, China

A Depth-integrated Non-hydrostatic Model for Free Surface Flow
Jiawen Sun, Jing Yin, National Marine Environmental Monitoring Center; Kezhao Fang, Dalian Univ of Tech, China

74. RENEWABLE ENERGY VIII:
Offshore Wind Structures 2 (V. 1)
Wednesday  June 28  08:00 Room 3
Chair: Michael Muskulus, NTNU, Norway

Ice Load Design Portal for Sub-Structures in Offshore Wind Turbines in Ice-Covered Sea Areas
Jaakko Heinonen, Maria Tikkanmdki, Juha Murkela, Paul Klinge, Toni Hekkala, VTT Technical Research Centre of Finland; Jussi Koskel, Semantum Oy, Finland

Sensitivity Analysis of Offshore Monopiles' Fatigue to Site Conditions Using Monte Carlo Simulation
Ana Glisic, Gongalo T Ferraz, Perer Schaumann, Leibniz Univ Hannover, Germany

Approach to Include Load Sequence Effects in the Design of an Offshore Wind Turbine Substructure
Roelof C Dragt, Diego L Allaix, Johan Maljaars, Johan T Tuitman, TNO; Mariano E Otheguy, Ilmaz Salman, Keppel Verolme BV, Netherlands

Stress Analyses of the Offshore Wind Turbine Structures Subjected to Ocean Waves
Yu-Yun Lin, National Cheng Kung Univ, Taiwan, China

Monopile Stiffness for Natural Frequency and SLS Calculations for Offshore Wind Turbines
M Saleh Jalbi, Subhamoy Bhattacharya, Univ of Surrey, UK

Numerical Investigation on Wave Loads of the High-Rise Pile Cap Foundation of Offshore Wind Turbines in East China Sea
Ling Chen, Jifu Zhou, Xu Wang, Inst of Mechanics, CAS, China

Fiber Bragg Grating Sensors and Signal Based Detection Methods for Failure Detection of an Offshore Wind Turbine Grouted Connection
Nathalie Müller, Fraunhofer IWES; Peter Kraemer, Bochum Univ of Applied Science, Germany; Dominique Luduc, Franck Schoefs, Nantes Univ, France

75. SUBSEA, PIPELINES, RISERS V:
Riser & Flow Assurance (V. 2)
Wednesday  June 28  08:00 Room 4
Chair: L Vitali, Saipem Energy Services, Italy

Research on Design Method of Grade X80 Large-diameter Tee
Peng Wang, Yinglai Liu, Qiang Chi, CNPC Tubular Goods Research Inst; Fenghui Wang, Northwestern Polytech Univ, China

Influence of Out-of-Plane Bending to the Fatigue Analysis for Mooring Chain Link
Dongsheng Qiao, Zhanbin Kang, Jun Yan, Dalian Univ of Tech, China

**High Fidelity Multiphase Simulations on an Efficient Platform**
Wasy Akhtar, 2H Offshore, USA

**Two Phase Annular Flow Approximation Using 1-D Flow Equations Coupled with a Drift Flux Model for Concurrent Flow in Vertical or Near Vertical Channels**
Ashwin A Gadgil, Robert E Randall, Texas A&M Univ, USA

**Investigation of Condition Parameters in Each Stage of a Three-stage Helico-axial Multiphase Pump via Numerical Simulation**
Yi Shi, Hongwu Zhu, Jinya Zhang, Binbin Yin, Ruiting Xu, Junlin Zhao, China Univ of Petroleum-Beijing, China

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**76. HPM V:**
**Arctic Materials 1 (V. 4)**
**Wednesday June 28 08:00 Room 5**

**Chair:** O. M. Akselsen, SINTEF, Trondheim, Norway  
**Co-Chair:** Kibong Kang, Yeonsei Univ, Korea

**Evaluation of Low Temperature Toughness in Welding of 420 MPa Steel for Arctic Application**  
Odd M Akselsen, H I Lange, X Ren, Antonio Alvaro, Bard Nyhus, SINTEF Materials and Chemistry, Norway

**Key Challenges in Materials and Welding for Application of Steel Structures in Arctic**  
Odd M Akselsen, X Ren, Antonio Alvaro, Bard Nyhus, SINTEF Materials and Chemistry, Norway

**Study of Adaptive Automated GMAW Process for Full Penetration Fillet Welds in Offshore Steel Structures**  
Emmanuel A Gyasi, Martin A Kesse, Paul Kah, Lappeenranta Univ.of Technology, Finland

**On the Relation between Fatigue and Static Ductile to Brittle Transition for Weld Simulated 420 MPa Structural Steel**  
Antonio Alvaro, Odd M Akselsen, Xiaobo Ren, Bard Nyhus, SINTEF Materials and Chemistry, Norway

**Advanced High Toughness X100 Seamless Pipes with a New Specialized Alloying Concept for Arctic Offshore Applications**  
Stephan Scherf, Silke Harksen, Ralf Hojda, Peter Lang, Markus Schuetz, Vallourec Deutschland GmbH; Rodolfo Nirello, Vallourec France, France

**Micromechanical Testing to Quantify Ductile-to-Brittle Deformation Mechanisms**  
Anette Brocks Hagen, Christian Thaulow, NTNU, Norway

**A Database Management System for Large Material Data Assessment at Low Temperature**  
Alexandre Kane, Vidar Osen, Hans I Lange, Hekon O Nordhagen, Bard Nyhus, Xiaobo Ren, Grytten Frode, Odd M Akselsen, SINTEF Material and Chemistry, Norway
Duplex Stainless Steels for Low Temperature Applications
Sarata Cisse, Sandra Le Manchet, Industeel France, France; Didier Paul, Industeel Belgium, Belgium; Vincent Villaret, Industeel France, France

Micromechanical Fracture Testing of Arctic Steel CGHAZ Cantilevers
Brage D Snartland, Aksel L L Kvaal, Christian Thaulow, NTNU, Norway

77. COASTAL III: Coastal Wave Mechanics 2 (V. 3)
Wednesday June 28 08:00 Room 6

Chair: Alex Sheremet, University of Florida, USA
Co-Chair: Bob Z You, Ludong Univ, China

A Method for Approximating Surface Elevation from a Shore Mounted X-Band Radar with a Low Grazing Angle
Charles E Greenwood, James Morrison, Angus Murray, Arne Vogler, Univ of the Highlands and Islands, UK

Improvement in Estimation Stability and Accuracy of Wave Directional Spectrum by a Bayesian Method for Swell Observation
Takashi Fujiki, Port and Airport Research Inst; Noriaki Hashimoto, Kyushu Univ; Koji Kawaguchi, Port and Airport Research Inst, Japan

Hamiltonian Boussinesq Simulations for Waves entering a Harbour with Access Channel
Ruddy Kurnia, Univ of Twente, Netherlands; Mochamad Badriana, Labmat-Indonesia, Indonesia; E van Groesen, Univ of Twente, Netherlands

Applied Extended Wind Wave Model for the Effect of Porous Bottoms and Reefs
Yuan-Jyh Lan, Tai-Wen Hsu, National Taiwan Ocean Univ; Yi-Shiang Lin, National Cheng Kung Univ, Taiwan, China

Experimental Study of the Interaction between Sediments and Offshore Turbulent Flows
Yi Lu, Kit Ming Lam, Univ of Hong Kong, China

Investigation of Wave Breaking Effect on Bragg Reflection by Series Submerged Breakwaters
Ying-Chi Chen, Ching-Piao Tsai, Wen-Hung Chang, Chun-Han Ko, National Chung Hsing Univ, Taiwan, China

Bragg Reflection of Water Waves by Multiple Composite Flexible Membranes
Weiwei Ding, Zhaojian Zou, Shanghai Jiao Tong Univ; Jingping Wu, Wuhan Univ of Tech, China
A Decision Model to Integrate Market and Non-Market Values for Platform Decommissioning
Bridget M McCann, Exponent; Max Henrion, Lumina Decision Systems; Brock B Bernstein, Consultant; Robert I Haddad, Exponent, USA

Implications of Large Scale Assets to the Effective Design of Structural Health Monitoring Systems
Athanasios J Kolios, Maria Martinez, Lin Wang, Cranfield Univ, UK

Improvement of Structural Monitoring of Jacket Platform
Michele Rizzo, Andrea Vignoli, Ostilio Spadaccini, Univ of Florence, Italy

Case Studies on Structural Health Monitoring of Offshore Bottom-fixed Steel Structures
Herman Vestli, Hirpa G Lemu, Univ of Stavanger; Bjorn T Svendsen, Ole Gabrielsen, DNV GL; Sudath C Siriwardane, Univ of Stavanger, Norway

Research on the Fatigue Health Monitoring System of the Hull Structure
HaoHui Zhang, Guoqing Feng, Huilong Ren, Youzhen Wang, Ruiying Yi, Harbin Engineering Univ, China

Clustering Techniques for Data Analysis and Completion of Monitored Structural Responses of a Floating Structure
Ioannis P Panapakidis, Technological Education Inst of Thessaly; Constantine Michailides, Liverpool John Moores Univ, UK; Demos C Angelides, Aristotle Univ of Thessaloniki, Greece

Time Domain Decision Making Support on the basis of Ship Behavior Monitoring and Flooding Simulation Database for On-board Damage Control
Hee Jin Kang, Korea Research Inst of Ships & Ocean Engineering, Korea

A Method of Dynamic Flooding Analysis in Time Domain for the Compartment Arrangement Design of a Ship
Ki-Su Kim, Myung-II Roh, Ju-Sung Kim, Seoul National Univ, Korea

Isogeometric Analysis of Hull Structural Strength for Floating Structures
Yanyun Yu, Yang Lin, Kai Li, Dalian Univ of Tech, China

Hatch Cover Structure Design Using Hybrid Optimization Method Based on BESO and RSM
Kai Li, Wei Xu, Decai Zhao, Dalian Univ of Tech, China
Development of Design Procedure of Energy Saving Rudders Using Various Numerical Codes
Masatoshi Hori, Takashi Kadowaki, Munehiko Hinatsu, Yasuyuki Toda, Osaka Univ, Japan

A Study on the Bionic Design Method for Yacht Shape
Yapeng Li, Wei Cai, Wuhan Univ of Tech, China

Benjamin Eustache, Bureau Veritas, France; Roland Werkhoven, Gijsbert De Jong, Bureau Veritas, Netherlands

Study of Ultimate Carrying Capacity on Ship Structures with Temporary Opening
Linzhi Xu, Renjun Yan, Wei Shen, Lun Li, Wuhan Univ of Tech, China

Isogeometric Analysis of Hull Structural Strength for Floating Structures
Yanyun Yu, Yang Lin, Kai Li, Dalian Univ of Tech, China

A Method to Estimate the Technical State of Ship Structures
Konstantin A Molokov, Far Eastern Federal Univ; Gennady T Kazanov, Pacific Higher Naval College; Maksim V Kitaev, Valery V Novikov, Gennady P Turmov, Far Eastern Federal Univ, Russia

80, GEOTECH IV: Foundation & Loads 1 (V. 2)
Wednesday June 28 08:00 Room 9

Chair: Osoon Kwon, Korea Inst of Ocean Science & Technology, Korea

Predicting the Drained Capacity of Skirted Foundations under Uniaxial Loads
Amin Barari, Virginia Tech, USA

Simplified Approach to Numerically Derive High Resolution Failure Envelope of Surface Foundations
Stephen Suryasentana, Balliol College, Univ of Oxford, UK

Numerical Modeling for the Response of Bucket Foundation under Long-term Cyclic Loading
Jeong Seon Park, Duhee Park, Hansup Kim, Hanyang Univ, Korea

Investigation on Bearing Capacity of Concrete Caisson in Clay
Shu Lin, Shuwang Yan, Tianjin Univ; Zhiliang Huo, Tianjin Municipal Engineering Design & Research Inst; Jingjing Zhang, Tianjin Univ, China

Tsunami Overflow Model Test on New Reinforcing Technique for Resilient Breakwater Foundation
Hemanta Hazarika, Kengo Nishimura, Babloo Chaudhary, Jie Liu, Kyushu Univ, Japan

Effect of Ice Load on Offshore Cellular Structures with Infill of Compressible Soil
Tatiana Chernova, Nikita Tsimbelman, Far Eastern Federal Univ, Russia; Steffen Giese, Corneliu Athanasu, Multiconsult, Norway
Load Response of Fiber Reinforced (FRP) Polymer Soil Nails
Darren Newell, Rohan Eccles, Erwin Oh, Griffith Univ, Australia

An Experimental Study on Ground Improvement Effect after Soil Improvement at the Back of the L-Shaped Retaining Wall
Toru Osakabe, Shozo Wada, Ashikaga Inst of Tech; Hideto Sato, Nihon Univ Junior College, Japan

81. ARCTIC VIII:
Panel
Wednesday June 28 08:00 Room 10
Chair: Ivana Kubat, National Research Council Canada, Canada
Co-chair: D Martskevich, ExxonMobil Procution Co, USA

WEDNESDAY 10:30

82. HYDRODYNAMICS XII:
NWT (V. 3)
Wednesday June 28 10:30 Room 1
Chair: Hamn-Ching Chen, Texas A&M University, USA

A Comparative Study on Three Approaches to Model Rogue Waves in Numerical Wave Tank
Jianghua Wang, Qingwei Ma, Shiqiang Yan, City University London, UK

Development of an Efficient Two-phase 3D Numerical Wave Flume
Charalambos Frantzis, Dimokratis G E Grigoriadis, Univ of Cyprus, Cyprus

Numerical Wave Flume Based on Second Order Wavemaker Theory
Haochen Zhang, Chuxue Liu, Jinxuan Li, Xiaohuan Tian, Dalian Univ of Tech, China

Three-dimensional Mass Source Wavemaker for Navier-Stokes Equations Models
Shih-Chun Hsiao, Yen-Lung Chen, Yu Hsiao, National Cheng Kung Univ, Taiwan, China

Application of ALE to Nonlinear Wave-Body Interaction, Part 2: Wave Radiation by a Non-Wall-Sided Structure
Jie Zhang, Masashi Kashiwagi, Taiga Asaumi, Osaka Univ, Japan

Numerical Investigation of Irregular Breaking Waves for Extreme Wave Spectra Using CFD
Ankit Aggarwal, Mayilvahanan A Shella, Hans Bihs, NTNU; Csaba Pakozdi, MARINTEK; Oyvind A Arntsen, NTNU, Noway

Numerical Study of Wave Interaction with the Vertical Cylinder Using 3D Viscous Numerical Wave Tank
Aditya G kodkani, Sriram V, IIT Madras, India
83. HYDRODYNAMICS XIII:
DP & Seakeeping Control 1 (V. 3)
Wednesday June 28 10:30 Room 2
Chair: Beom Seon Jang, Seoul National University, Korea

Backstepping-based Adaptive Control for Dynamic Position Using Orthogonal Neural Network
Linfeng Lu, Haixiang Xu, Wenzhao Yu, Hui Feng, Wuhan Univ of Tech, China

Determining Thruster-Hull Interaction for a Drill-Ship Using CFD
Arjen H Koop, Hans Cozijn, Patrick Schrijvers, Guilherme Vaz, MARIN, Netherlands

Research on Nonlinear Model Predictive Control for Dynamic Positioning Vessel
Qing Wen, Haixiang Xu, Hui Feng, Wenzhao Yu, Wuhan Univ of Tech, China

Weather Stand-by Assessment in Offshore Operations Using Motion Limit Criteria
Michele Drago, Andrea Del Guzzo, Luigino Vitali, Robert Bruschi, Saipem, Italy

Hydrodynamic Forces in Low Speed and Station-Keeping Model Test of DP Vessels
Qiaosheng Zhao, Qiang Sun, Naxin Wei, China Ship Scientific Research Center, China

Development of Simple Dynamic Positioning System - Algorithm and User Interface
Nobukazu Wakabayashi, Takayuki Watanabe, Kobe Univ; Misako Urakami, Oshima College; Daisuke Terada, National Research Inst of Fisheries Engineering, Japan

Deterministic Predictions of Vessel Responses Based on Past Measurements
Ulrik D Nielsen, Technical Univ of Denmark, Denmark

84. RENEWABLE ENERGY IX:
Offshore Wind Foundations (V. 1)
Wednesday June 28 10:30 Room 3
Chair: Kim Nielsen, Ramboll Group, Denmark

Rui He, Hohai Univ, China

The Seismic Response of Composite Bucket Foundation for Offshore Wind Turbines under Scour Conditions
Puyang Zhang, Nan Jia, Hongyan Ding, Tianjin Univ, China

Study on the Onshore Construction Process of Composite Bucket Foundations for Offshore Wind Turbines
Yaohua Guo, Puyang Zhang, Hongyan Ding, Conghua Le, Yonggang Liu, Tianjin Univ, China

Instrumentation of Impact Driven Monopile Foundations for Offshore Wind Turbines by Means of Adhesive Technology
Philipp Stein, Gregor Wisner, TU Braunschweig; Hauke Sychla, Grundbauingenieure Steinfeld und Partner; Jorg Gattermann, Elisabeth Stammen, TU Braunschweig, Germany
Development of a Pile Pushover Testing Platform for Offshore Windturbine Foundations
Wen-Jong Chang, National Cheng Kung Univ; An-Bin Huang, National Chiao Tung Univ; Shih-Hsun Choi, National Cheng Kung Univ, Taiwan, China

Capacity Degradation Method for Driven Steel Piles under Cyclic Axial Loading
Yu-Shu Kuo, National Cheng Kung Univ, Taiwan, China; Martin Achmus, Khalid Abdel-Rahman, Dominik Schaefer, Leibniz Univ Hannover, Germany; Chih-Yin Chung, National Cheng Kung Univ, Taiwan, China

85. SUBSEA, PIPELINES, RISERS VI:

Wednesday June 28 10:30 Room 4

Chair: Ljiljana D Oosterkamp, Statoil, Norway

UHB Model Uncertainty for Structural Reliability Analysis of Pipeline OOS Design
Matt Liu, Aker Solutions, UK

Pipeline UHB and OOS Design with Twin Peak Pressure and Temperature Distributions
Matt Liu, Colin Cross, John McGrail, Aker Solutions, UK

Effect of Pipe-Soil Interface Roughness on Undrained Uplift Capacity of Buried Offshore Pipelines
Shunhrajit Maitra, Santiram Chatterjee, Deepankar Choudhury, IIT Bombay, India

Modeling and Simulation of Automated Subsea Pipeline Inspection Gage (PIG) for Oil and Gas Production
Sylvester S Djokoto, Kaunas Univ of Technology, Lithuania

Technical Challenges of Design & Installation of Reel-layed Pipe-in-Pipe System in Deep-Water
Thurairajah Sriskandarajah, Subsea 7, UK; Don MacKay, Subsea 7, USA; Venu Rao, Daowu Zhou, Pasupathy Ragupathy, Subsea 7, UK; Shahryar Kashani, Subsea 7; Brian Power, Murphy Oil Corp, USA

Experimental Study on Dynamic Response of Pipes under Lateral Impact
Qingyang Liu, Ling Zhu, Jieling Kong, Mingsheng Chen, Wuhan Univ of Tech, China; Bin Wang, Brunel Univ London, UK

86. HPM V:

Arctic Materials 2 (V. 4)
Wednesday June 28 10:30 Room 5

Chair: O. M. Akselsen, SINTEF, Trondheim, Norway
Co-Chair: Kibong Kang, Yeonsei Univ, Korea

Continue
87. COASTAL IV: Storm Surge (V. 3)
Wednesday June 28 10:30 Room 6
Chair: Luca Matinelli, University of Padova, Italy
Co-Chair: Shinji Sassa, PARI, Japan

Analysis of Ship Mooring Force Influence Factors in Three Gorges Ship Lock and Experimental Research
Cheng Zhang, Lizheng Wang, Shunhua Chen, Wuhan Univ of Tech; Wei Zhang, Wuhan Rules and Research Inst, China

Wave Height to Depth Measures during Extreme Runup
James G Herterich, Frederic Dias, University College Dublin, Ireland

Simulation of Storm Surge in Northeast Coast of the US; A Closer Look at the Wind Forcing
Marissa J Torres, M Reza Hashemi, Scott Hayward, Isaac Ginis, Malcolm Spaulding, Univ of Rhode Island, USA

A Study on the Characteristic of Storm Surge by Using HHT Method
Wen-Chang Yang, Wan-Ting Chang, Yi-Chieh Lu, Yuan-Shiang Tsai, National Applied Research Labs, Taiwan, China

The Development of High-Resolution Coastal Storm Surge Operational Model and the Application of 2013 Typhoon Haiyan
Yu-Lin Tsai, Tso-Ren Wu, National Central Univ, Taiwan, China

88. OCEAN TECHNOLOGY IX:
Structural Health Monitoring 2 (V. 1)
Wednesday June 28 10:30 Room 7
Chair: Hirpa G Lemu, Univ of Stavanger, Norway
Co-Chair: AJ Kolios, Cranfield Univ, UK

Assessment and Analysis of Structural Health Monitoring Techniques for Rotating Machines
Hirpa G Lemu, Univ of Stavanger, Norway

Monitoring of Structural Degradation of Ageing Bridges in Marine Environment: A Framework Based on Model Flexibility
Sudath C Siriwardane, Univ of Stavanger, Norway

Structural Health Monitoring for Offshore Structures using Meta Modal
Cheon-Hong Min, Su-Gil Cho, Jae-Won Oh, Hyung-Woo Kim, Korea Research Inst of Ships & Ocean Engineering, Korea

Advanced Reliability Assessment of Offshore Wind Turbine Monopiles by Combining Reliability Analysis Method and SHM/CM Technology
Athanasiou Kolios, Lin Wang, Cranfield Univ, UK

Effect of Structural Health Monitoring Systems on the Reliability of a Fixed Offshore Jacket Platform
Mahmood Shafiee, Ebitimitula Etebu, Vranfield Univ, UK
Comparison of Jacket Launch Simulation and Field Measurement
Min He, Alan M Wang, Xin Li, Lei Wang, COOEC; Yining Chen, Xiufeng Liang, DNV GL, China

89. ADVANCED SHIP TECH II:
Ship Design & Production 2 (V. 4)
Wednesday June 28 10:30 Room 8
Chair: Kimihiro Toh, Kyushu Univ, Japan
Co-Chair: Benjamin Eustache, Bureau Veritas, France

Continue

90. GEOTECH V:
Foundation & Loads 2 (V. 2)
Wednesday June 28 10:30 Room 9
Chair: Yun Wook Choo, Kongju National Univ, Korea

On the Cautious Estimation of Characteristic Soil Strength for Axial Pile Capacity
Knut O Ronold, DNV GL, Norway

Investigation of Arching Effect Using Large Scale Model Test for Pile-Supported Embankment
Su Hyung Lee, Il Hwa Lee, Yeong Tae Choi, Min Taek Yoo, Korea Railroad Research Inst, Korea

Centrifuge Modeling of Cyclic Degradation of Axially Loaded Piles in Sand for Offshore Wind Turbine Structures
Jacquelyn Allmond, Geosyntec Consultants; Bao Li Zheng, Bruce L Kutter, Univ of California-Davis; Christopher Hunt, Geosyntec Consultants; Daniel W Wilson, Univ of California-Davis; Tom McNielan, McNielan & Associates, USA

A Study on Bearing Capacity of Waveform Micropiles Using Centrifuge Test
Young-Eun Jang, Univ of Science & Technology; Jin-Tae Han, Korea Inst of Civil Eng & Building Technology, Korea

A Numerical Study into the Impact of Soil Coring on Lateral Capacity of Piles with Large Diameter
Xiaojuan Li, Guoliang Dai, Weiming Gong, Xueliang Zhao, Southeast Univ; Fengfeng Zhou, Hohai Univ, China

Generalized Semi-analytical Solution for Laterally Loaded Pile in Multi-layered Soils with Transfer Matrix Method
Mingxing Zhu, Hongqian Ou, Jiangsu Electricc Power Design Inst; Weiming Gong, Southeast Univ, China

Assessment of p-y Approaches for Piles in Normally and Over Consolidated Soft Clay
Martin Achmus, Mauricio Terceros, Klaus Thieken, Leibniz Univ Hannover, Germany

Design of Large Scaled Tests Investigating the Lateral Load-Bearing Behavior of Monopiles
Severin Spill, Martin Kohlmeier, Fraunhofer IWES; Stefan Maretzki, Jan Duehrkop, Ramboll IMS, Maik Wefer, Fraunhofer IWES, Germany

91. ENVIRONMENT I: Oil Spill and Carbon Capture (V. 1)
Wednesday  June 28  10:30 Room 10

Chair: C. Bostater, Florida Inst. of Technology, USA
Chair: D P C Laknath, Lanka Hydraulic Institute, Sri Lanka

The Effects of Spatial and Temporal Resolutions of Hydrodynamic Model on the Simulated Behaviours of Subsurface Oil Spills in the Marine Environment
Haibo Niu, Shihan Li, Dalhousie Univ, Canada

Development of an Oil Spill Forecasting System Based on the Application of SCHISM Model
Chi-Min Chiu, Ching-Jer Huang, Li-Chung Wu, National Cheng Kung Univ, Taiwan, China; Yinglong Zhang, College of William and Mary, USA

Experimental and Numerical Analysis of Tsunami Triggered Oil Spill from Storage Tanks
Kyaw Wai Phyo, Osaka Univ, Japan; Junlin Liu, Shanghai Jiao Tong Univ, China; Youhei Takagi, Hiroyoshi Suzuki, Naomi Kato, Osaka Univ, Japan

In-situ Measurement of Nitrous Oxide Concentrations in the Exhaust Gases in the Underway Vessels
Mitsuru Hayashi, Kobe Univ; Dong-Hoon Yoo, National Maritime Research Inst, Japan

Preliminary Risk Assessment of CO₂ Submarine Storage in Glass-Ceramic Capsules
Arianna Azzellino, Caterina Lanfredi, Politecnico di Milano; Giovanni Capello, CO2Apps; Stefano Caserini, Politecnico di Milano; Dennis Ross, CO2Apps, Italy

On the Study of a Feasible LCA Method for the Ship Carbon Emissions Considering Uncertainty Correction
Menglei Mei, Wei Cai, Wuhan Univ of Tech, China

Study on the Characteristic Behaviours of Multiple Jets in Regular Waves
Zhenshan Xu, Yongping Chen, Hohai Univ, China

PLENARY
Wednesday  June 28  13:15 Peninsula A

Introduction: Jin S Chung, ISOPE, USA

Ocean Engineering – A Historical Perspective [Oral presentation]
Prof. Marshall Tulin, UC Santa Barbara, USA
92. HYDRODYNAMICS XIV:
CFD 1 (V. 3)
Wednesday June 28 14:00 Room 1

Chair: A. Khayyer, Kyoto University, Kyoto, Japan

On the Coupling of Incompressible SPH with a Finite Element Potential Flow Solver for Nonlinear Free Surface Flows
G Fourtakas, P K Stansby, B D Rogers, S Ling, Univ of Manchester; S Yan, Q W Ma, City University London, UK

Flow Simulation around Danjiang Bridge Using 3-D Large Eddy Simulation
Chun-Yuan Lin, Ting-Chieh Lin, Jiing-Yih Liu, National Cheng Kung Univ, Taiwan, China

Improved SPH for Simulating Violent Flow and Multi-Body Interaction
Xing Zheng, Harbin Engineering Univ, China; Qingwei Ma, Sity University London, UK; Wenyang Duan, Harbin Engineering Univ, China

An Improved Weakly Compressible SPH Method for Free-surface Flows
Xiangyu Hu, Chi Zhang, Nikolaus A Adams, Technical Univ of Munich, Germany

Systematic Validation of SPH Model for Wave Generation and Propagation
Andi Trimulyono, Hirotada Hashimoto, Kobe Univ; Kouki Kawamura, Natnional Maritime Research Inst, Japan

Modelling of Extreme Wave Impact on a Fixed Platform
Min Luo, Chan Ghee Koh, Wei Bai, National Univ of Singapore, Singapore

SPH Modelling of the Impact of a Flat Plate upon an Aerated Water Surface
Hassan Sdiq, David Graham, Jason Hughes, Plymouth Univ, UK

93. HYDRODYNAMICS XV:
DP & Seakeeping Control 2 (V. 3)
Wednesday June 28 14:00 Room 2

Chair: Wataru Koterayama, Kyushu University, Japan

DP Drillship Stationkeeping in Ice - Comparison between Numerical Simulations and Ice Basin Tests
Mohamed Sayed, Shameem Islam, David Watson, Ivana Kubat, Robert Gash, National Research Council Canada; Brian Wright, B Wright & Associates, Canada

Development and Evaluation of Heading Control System and Track Control System for Offshore Service or Observation
Takayuki Watanabe, Kobe Univ; Misako Urakami, Oshima College; Nobukazu Wakabayashi, Kobe Univ; Daisuke Terada, National Research Inst of Fisheries Engineering, Japan

Feature Recognition for Initial Pose Estimation to Enhance Vision-based UAV Relative Navigation
Fan Zhang, Haiwen Yuan, Changshi Xiao, Chunhui Zhou, Yuanqiao Wen, Wuhan Univ of Tech, China

A Technology for Measuring the Fender Motion Based on the Sensor JV901
Dongmei Yang, Zhiqun Guo, Hongqing Chen, Yuangang Zhang, Harbin Engineering Univ, China

Simulation Study on Course Adaptive Control for Ship Navigating in Continuous Curved Channel
Yanmin Xu, Junchao Zhao, Hongbing Zou, Chunming Zou, Hongxu Guan, Wuhan Univ of Tech, China

Dynamic Speed Control Model for Very Large Ship in Restricted Waters
Huanhuan Li, Jingxian Liu, Wen Liu, Wuhan Univ of Tech, China

Numerical Study on Squat of KVLCC2 in Infinite and Shallow Water
Fangfan Hu, Jiangtao Qin, Lilan Zhou, Keqiang Chen, Wuhan Univ of Tech, China

94. RENEWABLE ENERGY X:
Offshore Wind Aerodynamics (V. 1)
Wednesday June 28 14:00 Room 3

Chair: Amy Robertson, National Renewable Energy Lab, USA
Co-chair: Frank Adam, University of Rostock, Germany

A Focus on Fixed Wind Turbine Tests and Aerodynamic Numerical Model to Improve Fully-Coupled Simulations Adequacy with Model Test Results for a Floating Wind Turbine
Pauline Bozonnet, IFP Energies Nouvelles, France; François Caille, Cecile Melis, SBM Offshore, Monaco; Timothie Perdrizet, Yann Poirotte, IFP Energies Nouvelles, France

Experimental Investigation of Aerodynamic Damping Effects on the Semi-Submersible Floating Offshore Wind Turbine
Jiahao Chen, Fei Duan, Shanghai Jiao Tong Univ, China; Zhiqiang Hu, Newcastle Univ, UK

Effects of Inter-Turbines Spacing on Aerodynamics for Wind Farms Based on Actuator Line Model
Yong Ai, Ping Cheng, Decheng Wan, Shanghai Jiao Tong Univ, China

CFD Analysis on a Floating Offshore Wind Turbine under Extreme Sea Conditions
Yang Huang, Ping Cheng, Yong Ai, Decheng Wan, Shanghai Jiao Tong Univ, China

Combining AeroDyn V15 and MATLAB to Design Model Test Blade for a 6MW Floating Offshore Wind Turbine
Ziwei Guo, Yanping He, Long Meng, Yongsheng Zhao, Shanghai Jiao Tong Univ, China

Investigation of the Aerodynamics of a Floating Vertical Axis Wind Turbine in Pitch Motion
Hang Le, Dai Zhou, Jiabao Lu, Zhaolong Han, Shanghai Jiao Tong Univ, China

Aerodynamic Performance of Floating Offshore Wind Turbines by Using Modified BEM Method
Lei Duan, Ye Li, Shanghai Jiao Tong Univ; Xingang Zhang, Rongfu Li, Jiangsu Goldwind Science & Technology, China

Research on Aerodynamic Performance of a New Type of Collapsible Wing Sail
Dongqin Li, Xin Zheng, Ji Li, Jingjing Dai, Guohuan Li, Jiangsu Univ of Science & Tech, China

KEYNOTE

Wednesday June 28 14:00 Room 4

Introduction: Howard Wang, ExxonMobil Production Co., USA

Leveraging Technology for Deepwater and Arctic Developments in a Challenging Energy World
Brian McShane, IntecSea, USA

95. SUBSEA, PIPELINES, RISERS VII:
Pipeline 2 (V. 2)

Wednesday June 28 14:00 Room 4

Chair: Mason Wu, DMAR, USA

Next Generation Heating of Subsea Oil Production Pipelines
Jens K Lervik, SINTEF Energy Research; Oyvind Iversen, Nexans Norway; Kristian T Solheim, SINTEF Energy Research; Arne Nysveen, NTNU, Norway

A Novel Method for Identifying Support Conditions of Subsea Pipelines
Shimin Zhang, Ningsheng Liao, Qingxin Ding, Hang Zhang, Shuqiang Du, Shimin Zhang, China Univ of Petroleum-Beijing, China

Research on the Error Correction Algorithm and Experiment for Caliper Center Offset in the Offshore Pipeline
Shimin Zhang, Hao Wang, Wenming Wang, Zhaojun Feng, Xiaolong Li, China Univ of Petroleum-Beijing, China

Time-History Seismic Design of Integrated Subsea Pipeline System
Hadi Suroor, Gang Dong, Genesis, USA

96. HPM VI:
Composite Materials (V. 4)

Wednesday June 28 14:00 Room 5

Chair: Harovel G Wheat, Univ of Texas at Austin, USA
Co-Chair: Bard Nyhus, SINTEF Materials and Chemistry, Norway

Failure Mode Shifts of Foam-Core Sandwich Composite Corner Joint under Compression Load
Kai Qin, Renjun Yan, Linzhi Xu, Yaoyu Hu, Wuhan Univ of Tech, China

Research on Ultimate Strength and Damage Behavior of L-type Composite Joints
Bailu Luo, Yingfu Zhu, China Ship Development & Design Center, China
Degradation of Marine Reinforced Concrete Berth Structures on Sakhalin Island
Sergei N Leonovich, Eugeny E Shalyi, Lev V Kim, Alexander G Joegolyuk, Far Eastern Federal Univ, Russia

Study on Anti-Ice/Ice-Phobic Performances of Nano-SiO2/Amino-Silicone Modified Epoxy Resin Coatings
Jifeng Zhang, Qiang Xie, Harbin Engineering Univ; Chao Wang, Heilongjiang Academy of Science; Limin Zhou, Hong Kong Polytechnic Univ, China

Fundamental Study on Strength Development of High-Fluidity Ductile-Fiber-Reinforced Cementitious Composites Using Recycled Fine Aggregate
Yumi Maruyama, Ken Watanabe, Tokai Univ; Naoto Otsu, Sugatec Corp, Japan

Calibration of the Cohesive Parameters of a Fiberglass Reinforced Plastic Plates with an Embedded Delamination by Experiments
Marco Gaiotti, Dario Boote, Greta Maggiani, Tomaso Gaggero, Cesare Rizzo, Univ of Genova, Italy

97. COASTAL V: Coastal Structures 1 (V. 3)
Wednesday June 28 14:00 Room 6
Chair: E. Loukogeorgaki, Aristotle Univ. of Thessaloniki, Greece

Numerical Simulation of Wave Overtopping Over Low-Crested Breakwaters Using the Immersed Boundary Method
Theofano I Koutrouveli, Athanassios A Dimas, Univ of Patras, Greece

Real Sea Waves Interaction with an Array of Cylinders in Tandem
Xinran Ji, Hainan Univ; Shuxue Liu, Jinxuan Li, Harry Bingham, Dalian Univ of Tech, China

2D Experiment Study of Wave Action with Submerged Breakwater
Baolei Geng, Cheng Peng, Ciheng Zhang, Tianjin Research Inst for Water Transport Eng, China

The Influence of Wave Overtopping on the Stability Analysis of Vertical Breakwaters
Li-Hung Tsai, Ung-Chu Hsu, Inst of Transportation; Cheng-Jung Hsu, Meng-Syue Li, National Cheng Kung Univ; Shou-Shiun Lin, Inst of Transportation, Taiwan, China

Numerical Study on Wave Damping Performance of Arc-Type Plate Breakwater
Xueyan Li, Qing Wang, Ludong Univ; Chengxing Zhang, Xuchang Univ, China

The Reflection Performance of Two Horizontal Plates before Vertical Wall
Zhenglin Tian, Zhaochen Sun, Shuxiu Liang, Dalian Univ of Tech, China

The Experimental Investigation on the Protections of the Uncompleted Breakwaters under the Long-Term Wave Conditions in the Open Mediterranean Ocean
Sheng Peng, Youde Feng, Xiandao Feng, CCCC Second Harbour Engineering, China
98. OCEAN TECHNOLOGY X:
Jack-up & Jacket 1 (V. 1)
Wednesday June 28 14:00 Room 7
Chair: L F. Boswell, City University, London, UK

Practical Performance of OPC-grout for Offshore Wind Turbines in Large-scale Execution Tests
Dario Cotardo, Ludger Lohaus, Michael Werner, Leibniz Univ Hannover, Germany

An Innovative Hybrid Substructure of High Strength Concrete and Ductile Iron Castings for Offshore Wind Turbines
Marina Stümpel, Steffen Marx, Torsten Schlurmann, Leibniz Univ Hannover; Gunter Seidl, SSF Ingenieure AG; Joachim Goehlmann, GRBV, Germany

Retooling of Monopile Transition Piece for Offshore Wind Turbines
William A Schaffer, Junwon Seo, South Dakota State Univ, USA

Simulation and Semi-Analytical Tool for Wave in Deck Loading on Deck with Underneath Obstacles
Yu Chen, Inst. of High Performance Computing; Anand Bahuguni, Lloyd’s Register, Singapore; Yanling Wu, Univ of Science & Tech of China, China; Johan Gullman-Strand, Lloyd’s Register; Xin Lv, Jing Lou, Inst. of High Performance Computing, Singapore

Study on the Technology of Land Sliding Launch of Jack-Up Rigs
Wei Zhang, Yuhan Wang, Ruijia Zhou, Jinyang Song, Xingfeng Zheng, Guiyuan Cui, Shanghai Waigaoqiao Shipbuilding, China

Research on the Capacity of Deep Water Jackup Preloading in the Wave
Chang Gao, Hongtao Li, Song Liu, China Classification Society, China

99. ADVANCED SHIP TECH III:
Ship Design & Production 3
Wednesday June 28 14:00 Room 8
Chair: Sang-Hoon Shin, Hyundai Heavy Industries, Korea
Co-Chair: Yanyun Yu, Dalian Univ of Tech, China

CFD-based Hull Form Optimization to Enhance the Resistance and Seakeeping Performances
Aiqin Miao, Yong Ai, Decheng Wan, Shanghai Jiao Tong Univ, China

Resistance Optimization of a Cruise Ship Using a Hybrid Approach
Jiayi He, Hongmei Chen, Hai Yu, Xiaqing Xiong, Sheming Fan, Marine Design & Research Inst of China, China; Rui Sun, Virginia Polytechnic Inst & State Univ, USA

Resistance Optimization of a Cruise Ship Using a Hybrid Approach
Jiayi He, Hongmei Chen, Hai Yu, Xiaqing Xiong, Sheming Fan, Marine Design & Research Inst of China, China; Rui Sun, Virginia Polytechnic Inst & State Univ, USA

A Study on the Bionic Design Method for Yacht Shape
Yapeng Li, Wei Cai, Wuhan Univ of Tech, China

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CFD-based Hull Form Optimization to Enhance the Resistance and Seakeeping Performances  
Aiqin Miao, Yong Ai, Decheng Wan, Shanghai Jiao Tong Univ, China

Benjamin Eustache, Bureau Veritas, France; Roland Werkhoven, Gijsbert De Jong, Bureau Veritas, Netherlands

Study of Ultimate Carrying Capacity on Ship Structures with Temporary Opening  
Linzhi Xu, Renjun Yan, Wei Shen, Lun Li, Wuhan Univ of Tech, China

Simplified Nonlinear Kinetic Analysis during Fabrication Process of Ship Hull Plate  
Shuiming Zhang, Cungen Liu, Xuefeng Wang, Shanghai Jiao Tong Univ, China

100. GEOTECH VI: Foundation & Loads 3 (V. 2)  
Wednesday June 28 14:00 Room 9

Chair: Xiaoyan Yan, Chevron Energy Technology, USA  
Co-chair: Yongho Kim, Univ of Western Australia, Australia

Experimental Study on Axial Bearing Properties of Rock-socket Diaphragm Wall Foundation  
Guoliang Dai, Huiyuan Deng, Weiming Gong, Shaolei Huo, Southeast Univ, China

Half 2D Model Tests on Seepage Failure of Soil in Front of Sheet Piles and Non-Dimensional Formulization of the Critical Hydraulic Head Difference $H_c$  
Shigeru Nagai, Tsutomu Tanaka, Kobe Univ; Takashi Miki, National Inst for Rural Engineering; Kohji Kasamatsu, Kazuya Inoue, Kobe Univ, Japan

Evaluation of Dynamic Behavior of Pile-supported Slab Track by Centrifuge Tests  
Yun Wook Choo, Kongju National Univ; Ilwha Lee, Mintaek Yoo, Suhyung Lee, Korea Railroad Research Inst, Korea

Simulation of Pile Penetration in Sand: How FEM and DEM Work Differently  
Young-Hoon Jung, Seongmin Kim, Kyung Hee Univ, Korea

Decommissioning of Offshore Piles Using Vibration  
Craig Davidson, Michael Brown, Andrew Brennan, Jonathan Knappett, Univ of Dundee, UK

Casting Finish Control of Steel Piles Driven by the Vibratory Hammer Method  
Shuichi Shimomura, Nihon Univ; Masaki Nakai, Marufuji Sheet Piling, Japan

A Signal Processing Approach to Detect Unknown Pile Length  
Sheng-Huo Ni, Ji-Ling Li, Yu-Zhang Yang, Chi-Tong Yang, National Cheng Kung Univ, Taiwan, China

Compressive and Uplift Static Load Tests of Shaft and Base Grouted Concrete Bored Piles  
Jialin Zhou, Erwin Oh, Griffith Univ, Australia; Xin Zhang, Hongsheng Jiang, Shandong Jianzhu Univ, China; Mark Bolton, Griffith Univ, Australia
101. ENVIRONMENT II: Climate Effects & Diffusivity (V. 1)
Wednesday June 28 14:00 Room 10

Chair: F Lalli, ISPRA, Italy
Co-Chair: Haibo Niu, Shihan Li, Dalhousie Univ, Canada

Assessment of Levee Flood Defence Structures against the Impacts of Predicted Climate Change – A Case Study of the Humber Estuary
Lee Sencier, Ravindra Jayaratne, Univ of East London, UK

Feature Analysis of Sea Surface Wind over China Seas After 1980s
Guosong Wang, National Marine Data & Info Service; Min Hou, Tianjin Binhai New Area Meteorology Administration, China

Distribution of Perfluorinated Compounds in Water Environment of the Eastern Coast of South Korea
Ju Hyun Park, Seo Hee Kim, Jun Hyo Son, Chonnam National Univ; Bum Gun Kwon, Chosun College of Science & Tech, Korea; Katsuhiko Saito, Nihon Univ, Japan; Seon Yong Chung, Chonnam National Univ, Korea

The Role of Variable Diffusivity on Lagrangian Particle Models for Marine Environment
A Pini, G Leuzzi, P Monti, Univ of Rome, Italy

Evaluation of Horizontal Diffusivity in the Sea Surface Layer
Agnese Pini, Giovanni Leuzzi, Paolo Monti, Univ of Rome, Italy

Analysis of Flow Characteristics of Power Plant Effluents at Near-Field from Outlet
KiCheol Kim, Dong-A Univ, Korea

Numerical Modelling Flocculation Process of Mud Flocs in a Turbulent Settling Column
Chunyang Xu, Yongping Chen, Hohai Univ, China

Experimental Investigation of Vortex Tubes with Laval Nozzle
Viktor S Vlasenko, Viacheslav V Slesarenko, Aleksandr N Gulkov, Dmitriy A Zhidkov, Far Easter Federal Univ, Russia

102. HYDRODYNAMICS XVI: CFD 2 (V. 3)
Wednesday June 28 16:20 Room 1

Chair: K Tanizawa, National Maritime Research Inst, Japan
Co-chair: Ling Qian, Manchester Metropolitan Univ, UK

Numerical Study of a Buoyant Round Jet in a Stagnant Environment
Shih-Chun Hsiao, Yen-Lung Chen, Yu Hsiao, National Cheng Kung Univ, Taiwan, China

Development of a Cut-Cell Based Overset Meshing Approach for 2-Phase Incompressible Flow
Jessica Mackenzie, Ling Qian, Manchester Metropolitan Univ, UK

Geometric Modeling over Background Cartesian Grid Using Radial Basis Function
Shaoshan Zhou, Tingqiu Li, Wuhan Univ of Tech, China

3D Lattice Boltzmann Simulation of Oscillatory Boundary Layer Flow over Rippled Bed
Zhibo Zhou, Hanbao Chen, Tianjin Research Inst for Water Transport Eng; Qinghe Zhang, Tianjin Univ, China

Investigation of Bubble Dynamics near Free Surface in Compressible Fluid
Wei Xiao, Tongshun Yu, Ocean Univ of China; Yingyu Chen, Harbin Engineering Univ; Xujie Wang, Ocean Univ of China, China

CFD Analysis of Underwater Air Bubble Behavior for Designing Efficient Air Bubble Barrier
Minkyun Kim, Hyogeun Kim, Jongheon Park, GS E&C; Yong-Kab Lee, ANFLUX Inc, Korea

Modeling of 2D Irregular Waves on a Sloped Bottom Using a Fully Nonlinear Navier-Stokes/VOF Formulation
Luca Oggiano, IFE, Norway

103. HYDRODYNAMICS XVII:
   Added Resistance (V. 3)
   Wednesday  June 28  10:30  Room 2

   Chair: Decheng Wan, Shanghai Jiao Tong Univ, China

Wave Added Resistance and Propulsive Performance of a Cruise Ship in Waves
Petri Valanto, YongPyo Hong, Hamburg Ship Model Basin HSVA, Germany

Numerical and Experimental Study on the Estimation of Added Resistance by Waves for LNG Carrier
Taeyoung Kim, Seonoh Yoo, Semyun Oh, Jyun Joe Kim, Dongyeon Lee, Mooki Kim, Samsung Heavy Industries, Korea

Experimental Study on the Characteristics of the Motions and Added Resistance in Regular Head Waves of KVLCC2
Jin-Won Yu, Cheol-Min Lee, Inwon Lee, Jung-Eun Choi, Pusan National Univ, Korea

Numerical Investigation on Added Resistance with Wave Steepness for KVLCC2 in Short and Long Waves
Mingyu Kim, Univ of Strathclyde; Olgun Hizir, Ponente Consulting; Osman Turan, Atilla Incecik, Univ of Strathclyde, UK

Mesh Sensitivity Analysis for Numerical Simulation of a Damaged Ship Model
Ivana Martic, Nastia Deiuli, Andrea Farkas, Univ of Zagreb; Josip Basic, Univ of Split, Croatia

Hydrodynamic Analysis and Model Test Study of Wind Turbine Installation Vessel Optimization and Hydrodynamic Study of Wind Turbine Installation Vessel
Wenchi Ni, Zhuang Kang, Xiang Xu, Cheng Zhang, Harbin Engineering Univ, China
A Study on Hydrodynamics of Several Typical Floating Platforms for Wind Turbines
Xuedong Zhang, Qingwei Ma, Zhiqun Tuo, Harbin Engineering Univ, China

Feasibility Analysis of Floating Offshore Wind Turbine with Single Point Mooring System
Yougang Tang, Yan Li, Tianjin Univ, China; Qiang Zhu, Univ of California-San Diego, USA; Xiaoqi Qu, Jiawei Zhai, Ruoyu Zhang, Tianjin Univ, China

Concept Design and Global Performance Evaluation for 6MW Spar-type Floating Offshore Wind Turbine
Tao Zhou, Yanping He, Long Meng, Yongsheng Zhao, Shanghai Jiao Tong Univ, China

Pre-stressed Ultra High Performance Concrete Members for a TLP Substructure for a Floating Wind Turbine
Daniel Walia, Univ of Rostock, Germany

The GICON-TLP - A Modular Floating Substructure to Maximize the Flexibility within the Supply Chain
Frank Adam, Daniel Walia, Uwe Ritschel, Univ of Rostock; Colline Behr, ESG Edelstahl & Umwelttechnik GmbH; Jochen Grossmann, GICON Holding GmbH, Germany

Study on Coupling Effect of TLP-type FOWT with Flex-joints
Xun Meng, Meng Liu, Yanli Li, Ocean Univ of China; Dawei Chu, Shandong Provincial Key Lab of Ocean Engineering; Changzhi Wu, Curtin Univ, Australia

Effect of Nonlinear Wave Kinematics on Dynamic Response of TLP-type Floating Wind Turbine
Sudhir S Jagdale, Qingwei Ma, Shiqiang Yan, City University London, UK

Numerical Modelling of Impact to Pipelines by Real Geometry Trawl Gear Using LS-DYNA
Ljiljana D Oosterkamp, Hevar Ilstad, Statoil, Norway; Daniel Hilding, DYNAmore Nordic AB, Sweden

Subsea Rock Foundation Design Employing 3D FE Analysis and Time Effects
Per R Nystrom, Diego Lopez Mulero, Otilia Vermeulen, Stian Laland Rasmussen, IKM Ocean Design, Norway

The Effect of Low Confining Stress in Laboratory Tests on Pipeline Design
Henning Mohr, Samuel A Stanier, David J White, Univ of Western Australia, Australia
Challenges in Offshore Pipeline Decommissioning and What Can We Learn from Integrity Management Practices
Yijun Shen, Paul Birkinshaw, Roland Palmer-Jones, ROSEN Group, UK

Ovality Prediction of Reeled Seamless and Seam Welded Pipes
Paul Sicsic, Technip Innovation & Technology Center; Michael Martinez, IFP Energies Nouvelles, France; Aurelien Peping, Technip U.K., UK

Analysis of Fibre Glass Pipe Subjected to Tensile Load
Yuxin Xu, Yong Bai, Zhejiang Univ, China

Austenite Grain Growth Behavior after Recrystallization Considering Solute-Drag Effect and Pinning Effect
Kenzo Tashima, Shinya Sakamoto, Takuya Hara, Nippon Steel & Sumitomo Metal, Japan

KEYNOTE
Wednesday June 28 16:20 Room 5

Introduction: Hyun Woo Jin, ExxonMobil Research & Engineering Co., USA

The Metallurgy of Structural Steels for Cryogenic Use [Oral presentation]
J. W. Morris Jr, University of California at Berkeley, USA

106. HPM VII: Cryogenic Materials 1 (V. 4) Wednesday June 28 16:20 Room 5
Chair: Neerav Verma, ExxonMobil Upstream Research, USA

A/SA 553 Type III (Quenched and Tempered 7% Nickel) Steel Plates Capability Dedicated to Liquefied Hydrocarbons Storage Tanks and Transportation Vessels Fabrication
Natalia Loukachenko, Sylvain Pillot, Dany Cornut, Industeel France, France; Fabian Arrogante, Patrick Toussaint, Didier Paul, Industeel Belgium, Belgium

Fabrication and Assessment of Heavy 9% Nickel Steel Plates for Extra Large LNG Storage Tanks and Welded Pressure Vessels Dedicated to Cryogenic Applications
Natalia Loukachenko, Sylvain Pillot, Industeel France, France; Fabian Arrogante, Patrick Toussaint, Didier Paul, Industeel Belgium, Belgium

Transformation Behavior of Retained Austenite Phase in Running Crack Tip of Nine Percent Nickel Steel Plate
Daiki Nakanishi, Tomoya Kawabata, Shuji Aihara, Univ of Tokyo, Japan

Study on Methods to Enhance Properties of Polyurethane Foam Made of New Blowing Agents
Yeongbeom Lee, Korea Gas Corp, Korea

Development and Practical Application of the World's First Material (7%Ni-TMCP Steel) for LNG Storage Tank (Part 1)
Teppei Okawa, Takahiro Kamo, Hitoshi Furuya, Hironori Wakamatsu, Yasunori Takahashi, Toshimichi Nagao, Nippon Steel & Sumitomo Metal; Hiroshi Nishigami, Atsushi Iida, Sho Tomita, Osaka Gas; Shuichi Hirai, Masahiko Mitsumoto, Toyo Kanetsu Co, Japan

Development and Practical Application of the World’s First Material (7%Ni-TMCP Steel) for LNG Storage Tank (Part 2) [Oral presentation]
Sho Tomita*, Hiroshi Nishigami, Atsushi Iida, Osaka Gas co; Teppei Okawa, Takahiro Kamo, Hitoshi Furuya, Hironori Wakamatsu, Yasunori Takahashi, Toshimichi Nagao, Nippon Steel & Sumitomo Metal; Shuichi Hirai, Masahiko Mitsumoto, Shutaro Shinpo, Toyo Kanetsu K.K, Japan

107. COASTAL VI: Coastal Structures 2 (V. 3)
Wednesday June 28 16:20 Room 6

Chair: D.C. Angelides, Aristotle Univ of Thessaloniki, Greece
Co-Chair: S. Araki, Osaka University, Osaka, Japan

An Experimental Study on Sand Dune Cover Over a Coastal Structure
Badreyah Almarshed, Jens Figlus, Texas A&M Univ, USA

Numerical Investigation of Floating Breakwater Coupled with Mooring System Using OpenFOAM
Zhe Ma, Xianyun Zhang, Gangjun Zhai, Dalian Univ of Tech, China

The 3D-Numerical Simulation of Wave Impact on a Horizontal Plate
Dongxu Wang, Jinsong Gui, Dalian Ocean Univ; Jiawen Sun, Environmental Monitoring Center, SOA, China

Dynamic Simulation of a Kelp Raft Culture System under Current
Wenwan Cheng, Zhaochen Sun, Shuxiu Liang, Dalian Univ of Tech, China

A Method to Estimate Aging of Large Size Rubber Marine Fender
Hitoshi Akiyama, Osaka Univ; Teruya Shiomi, Japan Oil, Gas & Metals National Corp; Atsuo Omura, Shuji Yamamoto, Coastal Development Inst of Tech; Shigeru Ueda, IDEA Consultants; Toshiro Kamada, Osaka Univ, Japan

Extension of CADMAS-SURF / 3D for Motion Analysis of Moored Ship in Shallow Water
Yasuhiro Aida, Katsuya Hirayama, Port and Airport Research Inst, Japan

An Experimental Study of the Hydrodynamic Performance on the Anti-rolling Type Floating Breakwater
Zhiwen Yang, Mingxiao Xie, Tianjin Research Inst for Water Transport Engineering, China
108. OCEAN TECHNOLOGY XI:
Jack-up & Jacket 2 (V. 1)
Wednesday June 28 16:20 Room 7

Chair: Weiliang Dong, CNOOC-COSL, China
Co-Chair: Yu Chen, Inst. of High Performance Computing, Singapore

Simulation of Wave Forces on a Gravity Based Foundation by a BEM Based on Fully Nonlinear Potential Flow
Jeffrey C Harris, Ecole des Ponts; Christophe Peyrard, EDF R&D, France; Amin Mivehchi, Stephan T Grilli, Univ of Rhode Island, USA; Michel Benoit, Ecole Centrale Marseille, France

Seismic Response of Offshore Structures
Ali Sari, Istanbul Technical Univ, Turkey

Seabed Change and Soil Resistance Assessment of Jack up Foundation
Chu Kuan Lin, Ya Lan Chen, CECI Engineering Consultants, Taiwan, China

Development of Interface Program for Response of Jacket Platform
Lei Qi, Kailong Zhao, Shuang Xu, CNPC Research Inst of Engineering Technology, China

Numerical Simulation of Effects of the Spudcan Penetration on Pile Groups of Jacket Platforms
Jianhua Wang, Xiaoru Dai, Yifei Fan, Tianjin Univ, China

Research on Methodology of Jack-up Uplift Operation Analysis
Hongtao Li, Chang Gao, Jianbing Qu, China Classification Society, China

109. ADVANCED SHIP TECH IV:
Ultimate Strength & Fatigue (V. 4)
Wednesday June 28 16:20 Room 8

Chair: Yong Won Lee, Lloyds Register, UK

The Assessment of the Ultimate Hull Girder Strength of RO-RO Ship after Damages
Muhammad Z Muis Alie, Samel I Latumahina, Ganding Sitepu, Hasanuddin Univ, Indonesia

Experimental and Numerical Study on the Ultimate Strength of Box Girder Structures
Kimihiro Toh, Tatsuki Nemoto, Masahiro Maeda, Takao Yoshikawa, Kyushu Univ, Japan

Nonlinear Structural Study of the Ultimate Strength of Y-stiffened Curved Plate under Uni-Axial Compression
Kang Hu, Yang Ping, Cui Chong, Li Chuang, Wuhan Univ of Tech, China

The Prediction Research about the Ultimate Strength of Ship Hull Based on Sealed Test
Xiaobin Li, Jiamin Gong, Wuhan Univ of Tech, China
Transverse Strength and Reliability Assessment on Ore Carrier Cross-Deck Structures
Man Pan, Ling Zhu, Hanwei Zhou, Wuhan Univ of Tech, China; Kurnendu Kumar Das, ASRANet Ltd, UK

Simulation Research on Fatigue Crack Propagation Behavior in Bulb Stiffeners in Ship Structural Details
Jingxia Yue, Zhifan Dang, Wuhan Univ of Tech, China; Wengang Mao, Chalmers Univ of Tech, Sweden; Zheng He, Wuhan Univ; Chao Jin, Wuhan Univ of Tech, China

Research on Screening Fatigue Assessment Method based on New Common Structural Rules
Shijian Cai, Jiameng Wu, Yuan Wang, Marine Design & Research Inst of China; Fangchao Yan, Shanghai Bestway Marine Engineering Design, China

A Study on the Influence of Weather Routing on the Preciseness of Ship Structure's Fatigue Assessment
Luís De Gracia, Osaka Univ; Hitoi Tamaru, Tokyo Univ of Marine Science & Tech; Naoki Osawa, Osaka Univ; Toichi Fukasawa, Osaka Prefecture Univ, Japan

Stabilization of Marine Dredged Sediments Using Lime-Fly Ash-Red Mud-Phosphogypsum Binder
Youngsang Kim, Tan Manh Do, Chonnam National Univ, Korea

Reliability Evaluation on the Geotechnical DB Stored at Korean Geotechnical Information DB Portal System
Wanjei Cho, Bumsik Hwang, Boyoung Lee, Dankook Univ, Korea

Suggestion of the Long-Time Strength Prediction Method of the Chemical Grout Specimen with the Heat Curing
Shunsuke Takiura, Tokyo City Univ; Takamitsu Sasaki, Shunsuke Shimada, Kyokado Co; Naoaki Suemasa, Kazuya Ito, Tokyo City Univ, Japan

A Study on Injecting Micro Bubble Water Mixed with Silica Micro Particle
Yukoh Hasunuma, Naoaki Suemasa, Tokyo City Univ; Takamitsu Sasaki, Kyokado Engineering; Koichi Nagao, Sato Kogyo Co; Shunsuke Shimada, Kyokado Co; Kazuya Ito, Kentaro Uemura, Tokyo City Univ, Japan

Electro-osmotic with Injection of Microbial for Strengthening Soft Clay
Shao-Chi Chien, Hsuan Chuang Univ; Chang-Yu Ou, National Taiwan Univ of Science & Tech; Gio-Go Hsieh, Hwa Hsia Univ of Tech, Taiwan, China

Effects of Porosity on Mechanical Characteristics of Vesicular Basalts
Soonbo Yang, Shinji Sassa, Port and Airport Research Inst, Japan

A Preliminary Investigation to the Permeability of Carbonate Sand
Yin Wang, Yubin Ren, Dalian Univ of Tech, China
Property of Changing Porosity According to Soil Erosion in Ground
Seung-Kyong You, Myongji College; Boo-Bong Kim, Jung-Geun Han, Chang-Ang Univ; Gi-Kwon Hong, Korea Engineering & Construction, Korea

Post-grouting of Drilled Shaft Tips in Coral-reef Limestone Formations: A Case Study
Zhihui Wan, Guoliang Dai, Southeast Univ, China

111. UNDERSEA I:
Sensors and Observation (V. 2)
Wednesday June 28 16:20 Room 10

Chair: Shojiro Ishibashi, JAMSTEC, Japan
Co-Chair: Wenrong Hu, Shanghai Jia Tong Univ, China

Development of an Autonomous OBEM Measurement Vehicle for Offshore Resources Exploration
Satoru Yamaguchi, Kyushu Univ; Hirofumi Sumoto, Kagoshima Univ; Taishiro Katsu, Yasuki Kohno, Kyushu Univ, Japan

A Novel Self-Calibration Algorithm for Triaxial Magnetometer Equipped on AUV
Xueting Zhang, Hangzhou Dianzi Univ, China

Research on Strength and Acoustics Performance of Steel-reinforced Rubber Dome under Internal Pneumatic Pressure and External Water Pressure
Chenhui Ren, Deqing Wan, Shanghai Jiao Tong Univ, China

3D Image Mosaicking for Seabed Mapping Applying a Stereo Vision
Shojoiro Ishibashi, JAMSTEC, Japan

Design and Deployment Analysis of Subsea Deployable Structures
Yanjun Li, Tsung-chow Su, Florida Atlantic Univ, USA

Oceanographic Observation by Disk Type Underwater Glider for Virtual Mooring
Masahiko Nakamura, KYushu Univ; Wataru Koterayama, Open Univ of Japan; Yuzuru Ito, Takeshi Matsuno, Joshiro Moda, Kyushu Univ; Yasuhiro Morii, Nobuhiro Yamawaki, Kenichi Shimizu, Nagasaki Univ, Japan

Smart Float: A New Ocean Monitoring Technology
Junjun Cao, Di Lu, Zheng Zeng, Baoheng Yao, Lian Lian, Shanghai Jiao Tong Univ, China

The Development Status of an Underwater Multiple Observation System
Kiyotaka Tanaka, Hiroshi Yoshida, Shojoiro Ishibashi, Yutaka Ohta, Makoto Sugesawa, JAMSTEC, Japan

One algorithm of the autonomous unmanned vehicle single beacon navigation and its accuracy investigation [Proceedings only]
Andrei I. Mashoshin, Concern CSRI Elektropribor, JSC, Russia
WEDNESDAY 19:00

19:00  Grand Peninsula Annual Conference Banquet

27th ISOPE Cultural Event, Best Paper, Best Student Paper, Outstanding Student Scholarships, Best Organizer(s) and ISOPE Awards

Don’t forget the banquet ticket!

THURSDAY 08:00

112. HYDRODYNAMICS XVIII: CFD 3 (V. 3)

Chair: QW. Ma, City Univ London, UK
Co-Chair: M La Rocca, Univ Roma TRE, Italy

Thursday June 29 08:00 Room 1

Numerical Simulation of Interaction between Waves and Floating Body Using 2D IMLPG_R
A S Rijas, V Sriram, IIT Madras, India

Coupling of Viscous and Potential Flow Models with Free Surface Implementation and Application to Floating Structures
Xin Lu, Dominic D John Chandar, Yu Chen, Jing Lou, Inst of High Performance Computing, Singapore

Coupled Mooring Analysis of a Calm Buoy by a CFD Approach
Haoyuan Gu, Hamn-Ching Chen, Texas A&M Univ; Linyue Zhao, Saipem America, USA

A Hybrid Approach Coupling MLPG_R with QALE-FEM for Modelling Highly Nonlinear Water Waves
S Yan, Q W Ma, City University London, UK

Validation of an Open-source CFD Tool to Support Efficient Design of Offshore Gravity-based Structures Exposed to Extreme Waves
Mohammad H Babaei, Scott Baker, Andrew Cornett, National Research Council Canada, Canada

Using CFD to Assess the Hydrodynamic Loads on Non-Standard Jack-up Leg Shapes
Zana Sulaiman, Andries Hofman, Cees Wallenburg, GustoMSC BV, Netherlands

Modelling Wave Interaction with Deformable Structures Based on a Multi-region Approach within OpenFOAM
Pedro José Martínez Ferrer, Ling Qian, Zhihua Ma, Derek Causon, Mingham Clive, Manchester Metropolitan Univ, UK
The Numerical Simulation and Experimental Verification of the Perforated Double-shell Anti-roll Tank
Zeshuang Yu, Xiaofei Mao, Wuhan Univ of Tech, China

113. HYDRODYNAMICS XIX:
Internal Waves (V. 3)
Thursday June 29 08:00 Room 2

Chair: Jin S Chung, ISOPE, USA
Co-Chair: Ming-Hung Cheng, National Taiwan Ocean Univ, Taiwan, China

Influences and Countermeasures of Internal Waves on Deepwater Drilling in the China's South Sea
Liangbin Xu, Jianliang Zhou, Leixiang Sheng, Chaowei Li, CNOOC Research Center, China

Numerical Study on Flow Evolution of Mode-2 Internal Solitary Waves Propagating over Variable Topography
Ming-Hung Cheng, National Taiwan Ocean Univ; Chih-Min Hsieh, National Kaohsiung Marine Univ; Robert R Hwang, National Taiwan Ocean Univ; Wen-Chang Yang, National Applied Research Labs; Shih-Feng Su, Tamkang Univ, Taiwan, China

An Experimental Study of Internal Solitary Wave Forces on a Semi-Submersible
Min Chen, Ke Chen, Yunxiang You, Chen Chen, Shanghai Jiao Tong Univ, China

Wave Simulation Using an Internal Wave Maker in a CIP-based Model
Zhoufeng Ye, Mengyu Li, Xizeng Zhao, Zhejiang Univ, China

Experiments on Internal Waves Generated By a Self-Propelled Model in a Stratified Fluid
Hongwei Wang, Ke Chen, Yunxiang You, Xinshu Zhang, Shanghai Jiao Tong Univ, China

114. RENEWABLE ENERGY XII:
Offshore Wind: Floating 2 (V. 1)
Thursday June 29 08:00 Room 3

Chair: Moo Hyun Kim, Texas A&M University, USA
Co-chair: Climent Molins, Univ Politecnica de Catalunya, Spain

Design and Dynamic Performances of Y-Wind Floating Offshore Wind Turbine Platform
Sung Yoon Boo, Steffen A Shelley, Daejun Kim, VL Offshore, USA

Experimental Study for the Aligned Wind/Wave Direction Effects on the Dynamics of a Semi-submersible Floating Wind Turbine System
Shengtao Zhou, Chao Li, Yiqing Xiao, Harbin Inst of Tech; Xiaoping Song, XEMX Windpower, China

Uncertainty Analysis of OC5-DeepCwind Floating Semisubmersible Offshore Wind Test Campaign
Amy Robertson, National Renewable Energy Lab, USA
Reliability of Mooring Lines and Shared Anchors of Floating Offshore Wind Turbines
Spencer T Hallowell, Sanjay R Arwade, Casey Fontana, Don J DeGroot, Univ of Massachusetts; Andrew T Myers, Northeastern Univ, USA

Multiline Anchor System for the OC4 Semisubmersible Floating System
Casey M Fontana, Sanjay R Arwade, Don J DeGroot, Univ of Massachusetts, USA; Senol Ozmutlu, Vryhof Anchors, Netherlands; Charles Aubeny, Texas A&M Univ; Melissa E Landon, Univ of Maine; Andrew T Myers, Northeastern Univ; Spencer T Hallowell, Univ of Massachusetts; Hajjar F Jerome, Northeastern Univ, USA

Numerical Simulation of Floating Offshore Wind Turbine Constrained by Delta Mooring System
Hyunseong Min, Jun Zhang, Texas A&M Univ, USA

Probabilistic Distribution of Mooring Line Tension for Floating Offshore Wind Turbine
Min Zhang, Yanjian Wu, Junfeng Du, Yu Xu, Ocean Univ of China, China

115. SUBSEA, PIPELINES, RISERS IX:
Pipeline 4 (V. 2)
Thursday June 29 08:00 Room 4
Chair: Yijun Shen, Rosen Group, UK

Fiber-Optic Acoustic Leak Detection for Multiphase Pipelines
Shane Siebenaler, Southwest Research Inst; Venkat Krishnan, ExxonMobil Upstream Research; Jordan Nielson, John Edlebeck, Southwest Research Inst, USA

Prediction of CTOD Based on GE/EPRI for Pipes with a Semi-elliptical Surface Crack under Global Bending
Nam-Su Huh, Youn-Young Jang, Seoul National Univ of Science & Tech; Jae-Bin Lee, Ki-Seok Kim, Woo-Yeon Cho, POSCO, Korea

Effect of Internal Pressure on Ductile Fracture of Circumferential Weld Joints of X65 Pipeline
Shoma Onuki, Yusuke Seko, Tokyo Gas, Japan

Numerical Simulation of a Pipeline Repaired by Welding Reinforce Plate
Jie Zhang, CNPC Tubular Goods Research Inst, China

Anisotropy in UOE X65 Pipeline Steel and Its Effect on Fracture Behavior
Marcelo Paredes, Massachusetts Inst of Technology, USA; Junhe Lian, RWTH Aachen Univ, Germany; Tomasz Wierzbicki, Massachusetts Inst of Technology, USA

Axial Pipeline-Soil Interaction Behaviour of Deep Sea Pipelines
Umashankaran Satchithananthan, National Univ of Singapore, Singapore
116. HPM VIII: Cryogenic Materials 2 (V. 4)
Thursday  June 29  08:00  Room 5
Chair: J. W. Morris Jr, University of California at Berkeley, USA
Co-Chair: Kazukuni Hase, JFE Steel Corp., Japan

Experimental Investigation on No Vent Fill Process of Cryogenic Liquid
Kyoung Joong Kim, Lingxue Jin, Korea Advanced Inst of Science & Tech; Youngcheol Kim, Korea Testing Laboratory; Sangkwoon Jeong, Korea Advanced Inst of Science & Tech, Korea

Tensile and High Cycle Fatigue Behaviors of High-Mn Steels at Ambient and Cryogenic Temperatures
Sangshik Kim, Wonyu Seo, Daeho Jeong, Hyokyung Sung, Gyeongsang National Univ; Jeohyun Lee, Changwon National Univ, Korea

Research of YS355 Low Temperature Service Ferritic Steel Plates for LPG Carriers
Deng Luo, Daheng Xiao, Zhen Wang, Hunan Valin Xiangtan Iron & Steel; Zhongzhu Liu, CITIC Metal, China

Development of 3.5% Ni-QT Steel Plate for Storage Tanks of Ethane Carrier
Kijung Park, Jong Chul Kim, Sung-Doo Hwang, Yong-Chan Seo, Hyundai Steel; Cheol-Woong Yang, Sungkyunkwan Univ, Korea

Cryogenic Fatigue Properties of High Manganese Austenitic Steel Welded Joint
Young-Hwan Park, POSCO; Chang-Hyuk Yoo, Kyung-Su Kim, Inha Univ, Korea

Safety Evaluation of High Manganese Austenitic Steel under Accident Condition Using High Strain-Tensile Test
Dowon Seo, Jiwon Yu, Kihwan Kim, Geon Shin, POSCO, Korea

Technical Review on the Cryogenic High Manganese Steels before the 1990s
Keiji Ueda, Kazukuni Hase, Daichi Izumi, JFE Steel, Japan

A Microscopy and Microanalysis Study of Austenitic (Invar Alloy) Weldments
A Ozekcin, H Jin, ExxonMobil Research & Engineering, USA; N S Lim, C G Park, Pohang Univ of Science & Tech, Korea

117. COASTAL VII: Sediment Transport, Coastal Erosion 1 (V. 3)
Thursday  June 29  08:00  Room 6
Chair: Athanassios A Dimas, Univ of Patras, Greece

Effect of Wind and Tide-induced Currents on Hydrodynamics and Sedimentation in Two Tidal Inlets of the Messolonghi Lagoon, Western Greece
Nikolas Th Fouroniotis, Georgios M Horsch, Georgios A Leiferiotis, Univ of Patras, Greece

Medium Term Morphodynamic Modelling of the Yangtze Estuary
Ao Chu, Jiaai Tai, Hohai Univ, China
Large Eddy Simulation of Oscillatory Flow, Sediment Transport and Morphodynamics over Ripples
Georgios A Leftheriotis, Athanassios A Dimas, Univ of Patras, Greece

Ridge-Runnel and Swash Dynamics Field Experiment on a Steep Meso-Tidal Engineered Beach: Numerical Model Simulation of Ridge Accretion
Jens Figlus, Youn-Kyung Song, Texas A&M Univ; Patricia Chardon-Maldonado, Jack A Puleo, Univ of Delaware, USA

Understanding and Predicting Beach Erosion Using Data-Driven and Process-Based Models: Case Study on the South Coast of RI
M Reza Hashemi, Annette Grilli, Stefan Grilli, Lauren Schambach, Marissa Torres, Scott Hayward, John King, Univ of Rhode Island, USA

Numerical Modelling of Arctic Coastal Erosion due to Breaking Waves Impact Using REEF3D
Nadeem Ahmad, Hans Bihs, Arun Kamath, Oivind Arntsen, NTNU, Norway

Experimental Study of the Influence of Wave Breaking Over a Sloping Beach on the Flow Upstream of the Surf Zone
Konstantina A Gafani, Athanassios A Dimas, Univ of Patras, Greece

Physical and Numerical Modelling of Trench Infill
David Todd, HR Wallingford; Syed Abdullah Ali, Univ of Surrey; Richard Whitehouse, Michiel Knaapen, HR Wallingford, UK

Design and Operation of Sonde Arrays to Measure Fluid Mud in the Marine Environment
Charles R Bostater, Florida Inst of Tech, USA

118. OCEAN TECHNOLOGY XII:
Design 1 (V. 1)
Thursday June 29 08:00 Room 7

Chair: Alan M Wang, COOEC, China

Research of Damping Characteristics for Fluctuating System "Structure-Liquid" on the Basis of Limiting Transition Idea
Nikolai N Taranukha, Irina N Zhurbina, Komsomolsk-na-Amure State Tech Univ, Russia

Analysis on Design Method of Expansive Stressed Grouted Clamp for Platforms Assessing the Modified Stiffness and the Increased Environmental Loads
Wanlin Zhu, Xiang Shi, Jianren Chen, Ocean Univ of China; Lei Zhou, Chuanjie Zhang, COOEC, China

A Hybrid Time-Frequency Domain Method for Evaluation of Fatigue Damage in Offshore Structures
Xianqiang Qu, Yongliang Ma, Chaoshuai Han, Peijiang Qin, Meng Zhang, Harbin Engineering Univ, China

Design for the Reliability of the Deepwater Immersed Tunnel of Hongkong-Zhuhai-Macau Bridge Project
Wei Lin, Zhigang Zhang, Xiaodong Liu, Ming Lin, CCCC HZMB Island & Tunnel Project General Office, China

Availability Assessment of an Offshore Gas Treatment System Using Stochastic Petri Nets
Gilberto Francisco M de Souza, Ramos G Andres, Univ of Sao Paulo, Brazil

Wind-field Measurement of a Long-span Bridge near Yangtze River Estuary
Man Xu, Weiwei Guo, He Xia, Beijing Jiaotong Univ; Shaoqin Wang, Beijing Univ of Civil Eng & Architecture, China

Study on Protective Tooling Design of Dock Corridor
Hongtao Yuan, Chao Wang, Yuhang Wang, Yan Wen, Danli Zhao, Hankun Yang, Shanghai Waigaoqiao Shipbuilding, China

Thermal Performance Evaluation of Horizontal Spiral Coil-Type Ground Heat Exchangers
Seung-Rae Lee, Ming-Jun Kim, Jun-Seo Jeon, Seok Yoon, KAIST, Korea

119. ADVANCED SHIP TECH V:
High-Speed Planing (V. 4)
Thursday June 29 08:00 Room 8

Chair: Beom Seon Jang, Seoul National University, Korea

On the Lateral Motion Prediction of High Speed Multihull Vessels
Giuliano Vernengo, Claudio M Apollonio, Univ of Genoa, Italy; Luca Bonfiglio, Massachusetts Inst of Technology; Stefano Brizzolara, Virgian Tech, USA; Dario Bruzzone, Univ of Genoa, Italy

A Numerical Investigation on Motion Control of Wave-Piercing High-Speed Planing Craft in Calm Water using Appendages
Kwang Cheol Seo, Sangwon Kim, Gyeongwoo Lee, DongKun Lee, Mokpo National Maritime Univ, Korea

Numerical and Experimental Studies of Submergence Depth Influence on the Resistance of a Swath with Inclined Struts
Lifu Mao, Chengzhu Wei, Yinghui Li, Shikun Pang, Hong Yi, Shanghai Jiao Tong Univ, China

Hydrodynamics Prediction of a High Speed Wave-piercing Boat
Chengzhu Wei, Lifu Mao, Shikun Pang, Yinghui Li, Hong Yi, Shanghai Jiao Tong Univ, China

Research on the Added Mass of Trimaran from Transition State to Semi-planing State Based on the Boundary Element Method
Lei Zhang, Jia Ning Zhang, Dan Nie, Hao Jian Zhang, Dalian Maritime Univ, China; Yu Chen Shang, Univ of New Orleans, USA

Experimental Study of the Propulsion Performance of a Water-jet Planing Monohull
Hanbing Sun, Zhiqun Guo, Jinglei Yang, Jin Zou, Harbin Engineering Univ, China

Collapse Test of SWATH under Transverse Loads

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Xinrun Feng, Zhiyong Pei, Wuhan Univ of Tech, China

**120. GEOTECH VIII:**
Soil Property and Mechanics 2 (V. 2)

**Thursday**
June 29
08:00
Room 9

**Chair:** C F Leung, National Univ of Singapore, Singapore

**Co-chair:** Youngsang Kim, Cheonnam Univ, Korea,

**End Effect of T-bar Penetrometer Using 3D FE Analysis**
Y Wang, Y Hu, M S Hossain, Univ of Western Australia, Australia

**Triaxial Testing Beyond Yielding**
Tomas Sabaliauskas, Ibsen Bo Lars, Aalborg Univ, Denmark

**Effect of Rotation Rate on Field Vane Shear Strength**
Hiroshi Hirabayashi, Toa Corp; Masanori Tanaka, Port and Airport Research Inst; Takeshi Fukasawa, JGC Corp; Tomita Ryuizo, KOA Kaisersl Co, Japan

**A Feasibility Study on Swedish Weight Sounding Test Applied with Fricative for Classification of Soil Property**
Noriaki Sako, Shuichi Shimomura, Nihon Univ, Japan

**Geotechnical Interpretation of the Mietsu Dry Dock**
Takaharu Shogaki, National Defense Academy, Japan

**Trial Development of High Pressure Torsional-Shear Test System on Hollow Cylindrical Specimens**
Shohei Noda, Sho Kimura, Yasuhide Sakamoto, Hideki Minagawa, Norio Tenma, National Inst of AIST, Japan

**Numerical Simulation Method of Running Properties of High-speed Train under Subgrade Settlement**
Yanmei Cao, He Xia, Jia Guo, Beijing Jiaotong Univ, China

**Preliminary Study on Rockfall Spatial Probability Based on the Regional Numerical Model - A Case Study in Northeastern Taiwan**
Gin-Shan Wang, Chih-Hao Tan, Yu-Da Lyu, Cheng-Yu Ku, Shu-Ying Chi, Sinotech Engineering Consultants, Taiwan, China

**121. UNDERSEA II:**
AUV and Control (V. 2)

**Thursday**
June 29
08:00
Room 10

**Chair:** M Nakamura, Kyushu Univ, Japan

**A Study of Vehicle Design to Substantiate an Underwater Docking System for an AUV**
Yutaka Ohta, Hiroshi Yoshida, Shojiro Ishibashi, Yoshitaka Watanabe, Makoto Sugesawa, Kiyotaka Tanaka, JAMSTEC; Toshio Iseki, Shintaro Yamanaka, Tokyo Univ of Marine Science & Tech; Hiroyoshi Suzuki, Osaka Univ, Japan

**Design and Simulation of Autonomous Underwater Vehicle for Improving Low-Speed Flight Performance**
Jeonghoon Park, Sunghoon Kim, Yunho Jeon, LIG Nex1, Korea

Depth Control of an Autonomous Underwater Vehicle Based on L1 Adaptive Theory
Wenjin Wang, Guansxue Wang, Yingkai Xia, Gang Liu, Guohua Xu, Huazhong Univ of Science & Tech, China

Underwater Vehicle Model Structure and Parameters Discovering with Genetic Programming based Symbolic Regression
Chao Wu, Nailong Wu, Tong Ge, Xuyang Wang, Shanghai Jiao Tong Univ; Rui Yang, Ocean Univ of China, China

Heading Control of Autonomous Underwater Vehicle Based on Sliding Mode Control
Ying Chen, Ran Guo, Gang Liu, Guanxue Wang, Guohua Xu, Huazhong Univ of Science & Tech, China

Study of the Vibration Transfer Function about Small UUV
Arom Hwang, Hyongwoong Kwon, Koje College, Korea

THURSDAY 10:30

122. HYDRODYNAMICS XX: CFD 4 (V. 3)
Thursday  June 29 10:30 Room 1
Chair: M. Kashiwagi, Osaka University, Japan

Enhanced Fully Lagrangian Particle Methods for Hydroelastic Slamming Simulations
Abbas Khayyer, Hitoshi Gotoh, Hosei Falahaty, Takazumi Koga, Kyoto Univ, Japan

A Two-phase Incompressible-Compressible (water-air) Smoothed Particle Hydrodynamics (ICSPH) Method Applied to Focused Wave Slam on Decks
Steven J Ling, Qinghe Fang, Peter K Stansby, Benedict D Rogers, Georgios Fourtakas, Univ of Manchester, UK

CFD Study of VIM of a Paired-Column Semi-Submersible
Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong Univ, China

Numerical Simulation of a Damaged Ship Flooding with Three-Dimensional SPH Method
Han Cheng, Furn Ming, Aman Zhang, Harbin Engineering Univ, China

Wave-resistance Computation via CFD and IGA-BEM Solvers: A Comparative Study
Xinning Wang, Sotirios Chouliaras, Panagiotis D Kaklis, Univ of Strathclyde, UK

A Hybrid Solver Based on Efficient BEM-potential and LBM-NS Models: Recent LBM Developments and Applications to Naval Hydrodynamics
Chris M O’Reilly, Univ of Rhode Island, USA; Christian F Janssen, Hamburg Univ of Technology, Germany; Stephan T Grilli, Amin Mivehchi, Jason M Dahl, Univ of Rhode Island, USA; Jeffrey C Harris, Univ Paris-Est, France

**A Hybrid Solver Based on Efficient BEM-potential and LBM-NS Models: Recent BEM Developments and Applications to Naval Hydrodynamics**
Amin Mivehchi, Univ of Rhode Island, USA; Jeffrey C Harris, Univ Paris-Est, France; Stephan T Grilli, Jason M Dahl, Chris M O’Reilly, Univ of Rhode Island, USA; Christian F Janssen, Hamburg Univ of Technology, Germany

**Experimental and Numerical Simulation on the Whole Water Exit of a Spheroid**
Qiang Wu, Baoyu Ni, Bing Cui, Harbin Engineering Univ, China

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**123. HYDRODYNAMICS XXI:**

**Drag & Drag Reduction (V. 3)**

**Thursday June 29 10:30 Room 2**

**Chair:** Petri Valanto, Hamburg Ship Model Basin HSV A, Germany

**The EFD and CFD Study of Rudder-Bulb-Fin System in Ship and Propeller Wake Field of KVLCC2 Tanker in Calm Water**
Ping-Chen Wu, Truong Quang Tho, Osaka Univ; Kaoru Aoyagi, ClassNK; Kenta Koike, Yu Akiyama, Sanoyas Shipbuilding; Yasuyuki Toda, Osaka Univ, Japan

**The Ship Wall-Pressure Distribution Characteristics on Gas Film Drag Reduction**
Shengqiang He, Jiamei Wang, Chunhuai Chen, Aokui Xiong, Lizheng Wang, Hao Wang, Wuhan Univ of Tech, China

**Model Test Research of Low-Speed Vessel on Gas Film Drag Reduction**
Lizheng Wang, Shengqiang He, Jiamei Wang, Chunhuai Chen, Yan Jin, Qiong Li, Wuhan Univ of Tech, China

**Numerical Simulation on Drag Reduction of River-Sea Bulk Cargo by Gas Film**
Fan Yang, Lizheng Wang, Jiamei Wang, Chunhuai Chen, Liang Luo, Wuhan Univ of Tech, China

**In-Service Performance Evaluation of Low Frictional AF Marine Coating**
Inwon Lee, Hyun Park, Pusan National Univ, Korea

**Numerical Investigation of Shark Skin Inspired Riblet Drag Reduction Structure**
Yansheng Zhang, Osman Turan, Univ of Strathclyde, UK

**Drag Calculation of Macroscopic Objects with Groove Microstructure**
Wei Chen, Huazhong Univ of Science & Tech; Hao Zhangm Lei Wang, Wenjun Leng, Wuhan Second Ship Design & Research Inst; Guoxiang Hou, Huazhong Univ of Science & Tech, China

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**124. RENEWABLE ENERGY XIII:**

**Floating 3 (V. 1)**

**Thursday June 29 10:30 Room 3**

**Chair:** Andrew J Goupee, Univ of Maine, USA
Fully-coupled Aero-hydrodynamic Simulation of Floating Offshore Wind Turbines with Overset Grid Technology
Ping Cheng, Yong Ai, Yang Huang, Decheng Wan, Shanghai Jiao Tong Univ, China

OC5 Task II Simulations with FloaWDyn Numerical Model
Climent Molins, Alexis Campos, Pau Trubat, Daniel Alarcon, Univ Politècnica de Catalunya, Spain

FAST Model Calibration and Validation of the OC5-DeepCwind Floating Offshore Wind System against Wave Tank Test Data
Fabian F Wendt, Amy N Robertson, Jason M Jonkman, National Renewable Energy Lab, USA

Experimental Validation of a Spectral-Based Structural Analysis Model Implemented in the Design of the VolturnUS 6MW Floating Offshore Wind Turbine
Christopher K Allen, Anthony M Viselli, Andrew J Goupee, Habib J Dagher, Univ of Maine, USA

Global Performance Analysis of 5MW WindFloat and OC4 Semi-submersible Floating Offshore Wind Turbines (FOWT) by Numerical Simulations
HyoungChul Kim, MooHyun Kim, Texas A&M Univ, USA

Hydroelastic Analysis of Multi-Unit Floating Offshore Wind Turbine Platform (MUFOWT)
HeonYong Kang, Moo-Hyun Kim, Texas A&M Univ, USA

125. SUBSEA, PIPELINES, RISERS X: Pipeline 5 (V. 2)
Thursday June 29 10:30 Room 4

Chair: Hoawrd Wang, ExxonMobil Production Co., USA

Analytical Solution for Lateral Buckling of Unburied Subsea Pipelines with Sleeper
Yougang Tang, Zhenkui Wang, Tianjin Univ, China

Physical Study on Wave-induced Response of Sandy Seabed around a Trenched Pipeline
Jisheng Zhang, Dongying Dai, Yanyan Zhai, Hohai Univ, China

Numerical Simulation of the Buried Hot Submarine Oil Pipeline During Shutdown
Zhengwen Chen, Jihai Liu, Chunyu Liu, CNOOC Tianjin Co, China

Study on the Asphaltene Deposition Prediction Theory and Method in Deepwater Crude Oil Pipelines
Ping Lu, CNOOC China; Jiaqiang Jing, Southwest Petroleum Univ; Xiaying Du, Zhaoquang Qu, Chunyu Liu, CNOOC China, China

Study on Pigging Solution of Subsea Wet Gas Pipeline
Yufei Wan, Renwei Liu, Chunyu Liu, CNOOC; Liwan Li, China Petroleum Pipeline Bureau; Xin Qian, Xiaying Du, CNOOC; Daoming Deng, China Univ of Petroleum, China

Research on Waterproof for Subsea Pipe End by Spraying Polyurea Elastomer
Xu Jia, Jung Huang, Lusheng Jia, CNOOC Research Inst, China
A Methodology to Assess the Structural Reliability of Corroding Subsea Pipeline under Multiphase Flow
Yuan Min, Weichao Yu, Jing Gong, Xiaoping Li, China Univ of Petroleum-Beijing, China

126. HPM IX: Fatigue and Fracture 1 (V. 4)
Thursday June 29 10:30 Room 5
Chair: Takuya Hara, Nippon Steel & Sumitomo Metal Corp., Japan
Co-Chair: Sarah E Mouring, US Naval Academy, USA

Experimental Study on Fatigue Characteristics of T-welded Joint under Repeating Two-step Load
Jin Gan, Di Sun, Weiguo Wu, Huaxiang Sun, Zhou Wang, Wuhan Univ of Tech, China

Experimental Study on Fatigue Characteristics of Typical Welded Joints of River-Sea-Going Ship
Jin Gan, Xiaoyuan Gao, Weiguo Wu, Di Sun, Wuhan Univ of Tech, China

Enhanced Consideration of Residual Stresses in the Nominal Stress Approach for Fatigue Design of Welded Joints
Jonas V Hensel, Thomas Nitschke-Pagel, Klaus Dilger, TU Braunschweig, Germany

Investigation of Cleavage Initiation in Ferritic Steel with Carbide Distribution by using Cohesive Zone Method
Yang Li, Zhiliang Zhang, NTNU; Xiaobo Ren, Bard Nyhus, SINTEF Materials and Chemistry, Norway

Brittle Crack Propagation Behavior in Steel Subject to Bending (Development of Simplified Arrest Toughness Evaluation Testing Using SEN(B) Specimen)
Yuki Nishizono, Tomoya Kawabata, Shuji Aihara, Univ of Tokyo, Japan

Influence of Different Load Histories on the Cyclic Material Behavior of Nodular Cast Iron for Thick-Walled Application
Christoph Bleicher, Rainer Wagener, Heinz Kaufmann, Tobias Melz, Fraunhofer Inst for Structural Durability & System Reliability, Germany

Development and Practical Application of the World's First Material (7%Ni-TMCP Steel) for LNG Storage Tank
Teppei Okawa, Takahiro Kamo, Hitoshi Furuya, Hironori Wakamatsu, Yasunori Takahashi, Toshimichi Nagao, Nippon Steel & Sumitomo Metal; Hiroshi Nishigami, Atsushi Iida, Sho Tomita, Osaka Gas; Shuichi Hirai, Masahiko Mitsumoto, Toyo Kanetsu Co, Japan

127. COASTAL VIII: Sediment Transport, Coastal Erosion 2 (V. 3)
Thursday June 29 10:30 Room 6
Chair: Y. Yamamoto, Tokai University, Japan
Co-Chair: Jens Figlus, Texas A&M Univ, USA

Forces Distribution in Underwater Cohesive Soil during Artificial Fluidization
Guoliang Yu, Peng Zhao, Shanghai Jiao Tong Univ, China
Storm-Induced Coastal Hazards and Driving Forces along the Coast of China
Bob Z You, T S T Wang, Ludong Univ; X J X Wang, Beijing Normal Univ; Uan Liu, Ludong Univ, China

A Coupled Numerical-Theoretical Modeling of Morphodynamics for Beach Evolution
Yun-Chih Chiang, Tzu Chi Univ; Hui-Ming Fang, Hsing-Yu Wang, Sung-Shan Hsiao, National Taiwan Ocean Univ, Taiwan, China

Analysis of Coastal Erosion in Khlong Wan Coast
Kornvisith Silarom, King Mongkut’s Inst of Tech, Thailand; Yoshimichi Yamamoto, Tokai Univ, Japan; Nuthawath Charusrojthinadech, King Mongkut’s Inst of Tech, Thailand

Experimental Study on the Erosion of the Breakwater - A Case Study of Mai-Liao Harbor
Wei-Chun Hu, Chi-Fang Chan, Chao-Lung Ting, National Taiwan Univ; Chung-Pan Lee, National Sun Yat-sen Univ; Yung-Fang Chiu, Inst of Transportation; Pei-Yu Lee, Wei-Lun Li, National Taiwan Univ, Taiwan, China

Numerical Simulation of Scour Pattern and Scour Depth Prediction in Front of a Vertical Breakwater Using OpenFoam
Nikolaos Karagiannis, Theofanis Karambas, Christopher Koutitas, Aristotle Univ. of Thessaloniki, Greece

Experimental Study of Scour at a Perforated Seawall
Burak Aydogan, Berna Ayat, Ugur Can Turk, Yildiz Technical Univ, Turkey

Prediction of Gravel Beach Storm Profiles under Bimodal Seastates
Andrea Polidoro, Tim Pullen, HR Wallingford; Jack Eade, Southampton Oceanography Centre; Belen Blanco, HR Wallingford; Travis Mason, Southampton Oceanography Centre, UK

128. OCEAN TECHNOLOGY XIII :
Thursday June 29 10:30 Room 7
Chair: Bor-Feng Peng, Oild Field Development Engineering, USA
Co-Chair: Nikolai N Taranakha, Komsomolsk-na-Amure State Tech Univ, Russia

Numerical Study on the Out-of-Plane Bending (OPB) Behaviors of Studless Mooring Chain Links in Fairlead Structures
Meng Luo, Caspar Heyl, Shell International Exploration & Production, USA

Numerical Studies of Hydrodynamic Loads on the Segmental Tunnel Element of Hongkong-Zhuhai-Macao Fixed Link Project
Shaobo Wu, Shanghai Jiao Tong Univ; Wei Lin, Yi Li, CCCC Highway Consultants; Longfei Xiao, Shanghai Jiao Tong Univ, China

Abnormal State Diagnosis for Vibration Signal Using Probability Density Estimation and DTW
Jang Hyun Lee, Kyu Tack Hong, Se Yun Hwang, Inha Univ, Korea
Dynamic Analysis on the Pressure Relief Process of Hydrocarbon Pressure Vessel with Multi-Components under External Fire
Zhongde Zhang, Xin Qian, Yufei Wan, Wenguang Wang, Jihai Liu, CNOOC, China

Time History Fatigue Analysis of Bolted Connection of Deepwater Offshore Substructure under Dynamic Wind Loading with ESDU Spatial Coherence
Bor-Feng Peng, Cheng-Yo Chen, Carlos Llorente, Oil Field Development Engineering; Zhiling Li, BP Exploration & Production; Dilip R Maniar, Jennifer Velasquez, Stress Engineering Services, USA

Spar Platform Oil Storage and Offloading System Design
Weiwei Liu, Jin Wang, Jia Huang, Yang Liu, Yang Li, COTEC Offshore Engineering, China

129. ADVANCED SHIP TECH VI: Sea Trial & Performance (V. 4)
Thursday June 29 10:30 Room 8

Chair: Munehiko Minoura, Osaka Univ, Japan

Assessment of Ship Operating Performance by Using Full Scale Measurement
Jae-Han Kim, Min-Guk Seo, Jin-Woo Choi, Young-Bum Lee, Sung-Kon Han, Daewoo Shipbuilding & Marine Engineering, Korea

Investigation on the Scale Effect of Manoeuverability Based on Model Tests and Sea Trials of a Ship
Xiaojian Liu, Jun Nie, Zhaodan Xia, Sheming Fan, Marine Design & Research Inst of China, China

Long-term Distribution of Ship Responses with Operation Criteria on a Container Ship
Munehiko Minoura, Naoyuki Murata, Osaka Univ, Japan

URANS Response Surface of Water Ballast Tanks for Marine Devices Motions Controls
Luca Bonfiglio, MIT, USA; Giovanni Bracco, Biagio Passione, Nicola Pozzi, Giacomo Vissio, Sergej Sirigu, Giuliana Mattiazzo, Politecnico di Torino, Italy; Chryssostomos Chryssostomidis, MIT, USA

Development of a New Practical Ship Motion Calculation Method with Forward Speed
Seppo Kalske, Teemu Manderbacka, Napa Ltd, Finland

Numerical Study of Drag Reduction for a 20000DWT River-Sea Bulk Carrier by Counter-Flow Jetting of Water and Air Lubrication
Chao Yang, Aokui Xiong, Wuha Univ of Tech, China

2.5D Method for Pulsating Pressure Induced Waves on the Free Surface
Zhiqun Guo, Qingwei Ma, Hanbing Sun, Hongbin Hao, Harbin Engineering Univ, China

Simulation and Design of USV Target Detection and Tracking System Based on Multi-Ultrasonic Location
Supu Xiu, Yuanqiao Wen, Haiwen Yuan, Changshi Xiao, Wuhan Univ of Tech, China
Standard Zigzag Maneuver Simulations in Calm Water and Waves with Direct Propeller and Rudder
Jianhua Wang, Decheng Wan, Shanghai Jiao Tong Univ, China

Wavelet Denoising for Ship Model Test Data in Identification of Ship Maneuvering Mathematical Model
Yan Jiang, Zaojian Zou, Shanghai Jiao Tong Univ, China

130. GEOTECH IX: Geohazard & Liquefaction (V. 2)
Thursday June 29 10:30 Room 9
Chair: Seung-Rae Lee, KAIST, Korea

Criteria for the CPT-based Liquefaction Severity Index Classification
Chih-Sheng Ku, Chaow-Wei Chen, I-Shou Univ, Taiwan, China

An Experimental Study on Liquefaction Strength Property of Improved Sand by Micro-Particles
Kentaro Uemura, Tokyo City Univ; Takamitsu Sasaki, Kyokado Engineering; Naoaki Suemasa, Kazuya Ito, Tokyo City Univ; Koichi Nagao, Sato Kogyo Co; Shunsuke Shimada, Kyokado Co, Japan

Liquefaction Resistance of Sand under Sequenced Earthquake Motions
Takaaki Kobayashi, Shinji Sassa, Keita Watanabe, Port and Airport Research Inst, Japan

Correlation between Liquefaction Resistance and Penetration Resistance Nsw of Swedish Weight Sounding Tests
Kenta Kumada, Noriaki Sako, Shuichi Shimomura, Toshio Adachi, Nihon Univ; Tsutomu Hirade, Building Research Ins, Japan

GNSS Buoy Array in the Ocean for a Synthetic Geohazards Monitoring System
Teruyuki Kato, Univ of Tokyo; Yukihiro Terada, Kochi College; Keiichi Tadokoro, Nagoya Univ; Akira Futamura, Yuge College; Morio Toyoshima, Shin-ichi Yamamoto, Mamoru Ishii, Takuya Tsugawa, Michi Nishioka, Kenichi Takizawa, NICT; Yoshinori Shoji, MRI-JMA; Tadahiro Iwasaki, Naokiyo Koshikawa, JAXA, Japan

Assessment of the Stability of an Excavation in Clay by Means of CPTU and VST Results
Vincenzo Silvestri, Claudette Tabib, École Polytechnique de Montréal, Canada

Evaluation of Ground Shaking Characteristics with High Density for a Same Grid Square and Its Application
Yutaro Okawa, Yoshiya Hata, Osaka Univ; Atsushi Mikami, Tokai Univ; Ken-ichi Tokida, Osaka Univ, Japan

A Preliminary Analysis into Slit Dam Design for Debris Flow Mitigation
Seung-Rae Lee, Nikhil Nedumpallil Vasu, Minseop Kim, Joonyoung Park, Deuk-Hwan Lee, KAIST, Korea

Recent Landslides and Their Historical Distribution Using Airborne Laser Altimetry: Korea's Case
Tai-Hoon Kim, A-Reum Cha, National Disaster Management Inst, Korea
Identification of Recent Landslides Due to Climate Change: Korea's Case
A-Reum Cha, Tai-Hoon Kim, National Disaster Management Inst, Korea

131. UNDERSEA III: Robotics and Propulsion (V. 2)
Thursday June 29 10:30 Room 10

Chair: Yu Wang, Inst of Automation, CAS, China

Numerical Prediction of Effective Wake Field for a Submarine Fitted with a Pump-Jet Propulsor via a Hybrid Approach
Zhiqiang Rao, Chenjun Yang, Shanghai Jiao Tong Univ, China

DocuScooter: A Novel Robotics Platform for Marine Citizen Science
David Scaradozzi, Silvia Zingaretti, Luca Panebianco, Univ Politecnica Delle Marche, Italy; Corentin Altepe, INNOVASUB; S Murat Egi, Galatasaray Univ, Turkey; Marco Palma, Ubaldo Pantedo, Davide Ferraris, UBICA srl, Italy

The Development of the Motor Driver Integrated Subsea Thruster System
Makoto Sugesawa, Hiroshi Yoshida, Shojiro Ishibashi, Yutaka Ohta, Kiyotaka Tanaka, JAMSTEC, Japan

Interactions of Tadpole School Swimming in Turbulent Flow
Wenrong Hu, Xuyang Chen, Shanghai Jia Tong Univ, China

Switching Control for 3-D Way-point Tracking of a Biomimetic Underwater Vehicle
Rui Wang, Yu Wang, Shuo Wang, Cong Tang, Inst of Automation, CAS, China

Finite Element Analysis of the Straight Working Behavior of the Submarine Move-In-Soil Robot Based on CEL Algorithm
Hao, Chen, Nanyang Technological Univ, Singapore; Shuwan Yan, Lin Shu, Tianjin Univ; Zhiliang Huo, Tianjin Municipal Eng Design & Research Inst, China

Study on Control Approach of Underwater Manipulator of Large Scale Based on Rigid-Flexible Coupling Model
Daomin Huang, Guoyuan Tang, Guohua Xu, Huazhong Univ of Science & Tech, China

THURSDAY 12:00

STUDENT FORUM
Refreshment served
Format TBA

Advance Reservation required at isope-5@isope.org by May 20

Thursday June 29 12:00 TBA

Student Organizers:
Jocelyn M Kluger and Maha N Haji,, Massachusetts Inst of
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<th>Title</th>
<th>Authors</th>
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<td>Tsunami 1 (V. 3)</td>
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<td>Thursday</td>
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<td>Room 1</td>
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<td>Chair</td>
<td>Hua Liu, Shanghai Jiao Tong University, China</td>
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<td>NASA's Tsunami Early Detection System</td>
<td>Y Tony Song, NASA Jet Propulsion Lab, USA</td>
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<td>FPGA Based Solution for Fast Tsunami Wave Propagation Modeling</td>
<td>Mikhail M Lavrentiev, Novosibirsk State Univ; Andrey G Marchuk, Inst of Computational Math &amp; Mathematical Geophysics; Konstantin K Oblaukhov, Inst of Automation &amp; Electrometry; Alexey A Romanenko, Mikhail B Shadrin, Novosibirsk State Univ, Russia</td>
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<td>Tsunami Detection by High Frequency Radar Using a Time-Correlation Algorithm: Performance Analysis Based on Data from a HF Radar in British Columbia</td>
<td>Charles-Antoine Guerin, Univ de Toulon, France; Patrick Moran, Stephan T Grilli, Annette Grilli, Univ of Rhode Island, USA; Tania Lado Insua, Univ of Victoria, Canada</td>
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<tr>
<td>An Empirical Formula of Evaluation of Wave Amplitude for Trans-Ocean Tsunamis</td>
<td>Hua Liu, Wei Wu, Zhicheng Zhang, Shanghai Jiao Tong Univ, China</td>
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<td>Tsunami Run-Up Modeling with Adaptive Mesh Refinement: Monai Valley Benchmark Test</td>
<td>Han Soo Lee, Hiroshima Univ, Japan</td>
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<tr>
<td>A Study on Characteristics of Local Pressure on Coastal Dikes Induced by Tsunami Overflow</td>
<td>Takahide Honda, Teppei Omata, Chathura Manawasekara, Yukinobu Oda, Kazunori Ito, Taisei Corp, Japan</td>
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<td>Design and Performance Testing of Green Coastal Levees to Reduce Tsunami Impact, on the Coasts of Akoedo and Mizuumi, Japan</td>
<td>Ryuji Nikaido, Shoya Kitagawa, Yusuke Igarashi, CTI Engineering; Shigeki Endo, Iwate Prefectural Government, Japan</td>
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<tr>
<td>Experimental Study on Reduction of Tsunami Wave Force Acting on Land Structures Due to Protective Barriers</td>
<td>Kazuki Suzuki, Kajima Corp; Tsuyoshi Ikeya, Tokyo Univ of Marine Science &amp; Tech; Seiya Suenaga, Takako Fukuyama, Nobuyuki Iwamae, Yoshinobu Akiyama, Tomokazu Tateno, Kajima Corp, Japan</td>
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</tbody>
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133. HYDRODYNAMICS XXIII:
Seakeeping Dynamics I (V. 3)
Thursday  June 29 14:00  Room 2

Chair: Masashi Kashiwagi, Osaka Univ, Japan
Co-Chair: Yachong Liu, Marine Design & Research Inst. of China, China

PMM Tests Based Maneuverability Estimation of a Trimaran with Wide Speed Range
Dae-Hyuk Kim, Kyepyo Rhee, Nakwan Kim, Seoul National Univ; Jinhoeng Ahn, Agency for Defense Development, Korea

Hydrodynamic Performance of Tandem Oscillating Foils in Waves
Dongjiao Wang, Huimei Xie, Sough China Univ of Tech; Zijun Lin, Hunan Univ; Shouqiang Qiu, Jiawei Ye, South China Univ of Tech, China

Numerical Calculation on Propeller-induced Pressure Fluctuation of a River-to-sea Ship
Weiguo Wu, Jiezheng Wei, Yongshui Lin, Shengjie Qin, Tao Yang, Wuhan Univ of Tech, China

An Innovative Force Sensor to Evaluate the Drag of Small Outboard Motor Watercrafts
Giuseppe Conte, David Scaradozzi, Daniele Mannocchi, Anna Maria Perdon, Univ Politecnica delle Marche, Italy

Stability Analysis of Randomly Excited Ship Parametric Roll Resonance
Xiao Zhang, China Ship Development & Design Center; Hezhen Yang, Shanghai Jiao Tong Univ, China

Numerical Study of the Characteristics of Strongly Stratified Flows Past a Cylinder
Mingchang Niu, Yong Ding, Weizhuang Ma, Yuce Xi, Harbin Engineering Univ, China

Anti-Roll Tanks
Louis Diebold, Bureau Veritas, France

134. RENEWABLE ENERGY XIV:
Wind Energy Simulations (V. 1)
Thursday  June 29 14:00  Room 3

Chair: Themis P Sapis, Massachusetts Inst of Technology, USA

Comparing Fatigue Loads in Floating Wind Turbine Basin Tests: Geometric-scaled, Performance-scaled, and Hybrid Approaches
Matthew Hall, Univ of Prince Edward Island, Canada; Andrew J Goupee, Univ of Maine, USA

3D Fully Nonlinear Beam Dynamics of Offshore Wind Turbines
Carten Corte, Corte (Ingenierbuero), Germany

Geometric Parameters' Effect Characterization and Design Optimization of a Micro Scale Cross-flow Turbine for an Improved Performance
Hirpa G Lemu, Endashaw T Woldemariam, Univ of Stavanger, Norway

A First-Order Dynamics and Cost Comparison of Wave Energy Converters Combined with Floating Wind Turbines
Jocelyn M Kluger, Alexander H Slocum, Themis P Sapsis, Massachusetts Inst of Technology, USA

135. SUBSEA, PIPELINES, RISERS XI:
Installation (V. 2)
Thursday June 29 14:00 Room 4
Chair: Howard H Wang, ExxonMobil Production Co., USA

Low Cycle Tearing in a Deepwater Buckle Arrestor Assembly Girth Weld during S-Lay Installation
Ruud Selker, Ping Liu, INTECSEA; Erich Jurdik, Jay Chaudhuri, South Stream Transport BV, Netherlands; Andrea Fonzo, Massimo Di Biagio, Centro Sviluppo Materiali, Italy

Design and Construction Challenges of Complex Inline Pipeline Subsea Structures Installed in S-lay
Hammam Zeitoun, Justin Kelly, Sean Dennis, Wood Group, Australia

Research on the Installation Window of Marine Riser in Deepwater Drilling: Based on the Mechanics Analysis and Actual Sea Environment
Yanbin Wang, Deli Gao, Jun Fang, China Univ of Petroleum – Beijing, China

Deepwater Installation of Steel Catenary Riser and Flowline Using 1st End Pull-in
Shutao Xing, Consultant, USA

Evaluation of Dynamic Amplification Factor for Installation Loads Using Experimental Hydrodynamic Forces
Hema Wadhwa, INTECSEA, Australia

136. HPM X:
Fatigue and Fracture 2 (V. 4)
Thursday June 29 14:00 Room 5
Chair: Yasuhiro Shinohara, Nippon Steel & Sumitomo Metal, Japan
Co-chair: Hyunjo Jun, ExxonMobil Research & Engineering, USA

Effect of Sour Acidizing Treatments on the Fatigue Crack Growth Performance of Welded C-Mn Line Pipe Steels
Colum M Holtam, Ramgopal Thodla, Brandon Gerst, DNV GL; Weiwei Yu, Jonathan Bowman, Xiaoyan Yan, Chris Leinweber, Apurva Batra, Chevron Energy Technology, USA

Comparing Fracture Toughness Transition Curves for X70 Pipe
William Mohr, Paul Zelenak, EWI, USA

Effect of Acidizing Treatments on the Fatigue Performance of Welded C-Mn Line Pipe Steels
Colum M Holtam, Ramgopal Thodla, Brandon Gerst, DNV GL; Weiwei Yu, Apurva Batra, Jonathan Bowman, Chris Leinweber, Chevron Energy Technology, USA
Comparing Transition Curves for Charpy and CTOD for Four Offshore Steels
William Mohr, Paul Zelenak, EWI, USA

Effect of Sour Acidizing Treatments on the Fracture Toughness Performance of Welded C-Mn Line Pipe Steels
Colum M Holtam, Ramgopal Thodla, Brandon Gerst, DNV GL; Weiwei Yu, Jonathan Bowman, Xiaoyan Yan, Chris Leinweber, Apurva Batra, Chevron Energy Technology, USA

Prediction of Charpy Impact Property of Weld Simulated HAZ of High-Strength Steel by Weakest-Link Fracture Model
Michihiro Kunigita, Shuji Aihara, Tomoya Kawabata, Tadashi Kasuya, Univ of Tokyo, Japan

A New Likelihood Function for Obtaining Weibull Stress Parameters for Cleavage Fracture Initiation in Inhomogeneous Materials
Itsuki Kawata, Shuhei Yoshizu, Hiroaki Nakai, Kazuki Shibanuma, Shuji Aihara, Univ of Tokyo, Japan

137. COASTAL IX: Coastal Management (V. 3)
Thursday June 29 14:00 Room 6
Chair: L.-K. Chien, National Taiwan Ocean Univ., Taiwan, China
Co-Chair: Yongping Chen, Hohai Univ, China

A Study of Coastal Protection Zone Designation and Disaster Risk Assessment under Climate Change in Taiwan
Lien-Kwei Chien, C-C Hsieh, W-P Huang, J-P Wu, National Taiwan Ocean Univ, Taiwan, China

A Monitoring and Modeling Study for Kikiaola Harbor in Hawaii, USA
Lihwa Lin, Zeki Demirbilek, US Army Corps of Engineers, USA

Coastal Inundation and Erosion Hazards on the Coast of China
Bob Z You, Ludong Univ, China

Investigation on Coastline Evolution Using Long-Term Observations and Numerical Modelling
Elvira Armenio, Francesca De Serio, Michele Mossa, Technical Univ of Bari; Biagio Nobile, Conisma National Inter-Univ; Antonio F Petrillo, Technical Univ of Bari, Italy

An Experimental Study on Beach Profile Changes Using Reduced Shells
Hiroki Saga, Kobe City College of Technology; Gozo Tsujimoto, Kumamoto Univ; Tetsuya Kakinoki, Kohji Uno, Kobe City College of Technology; Kaoru Kobayashi, Ibaraki Univ, Japan

Effect of Jetties in Coastal Change at Chumphon Estuary
Atsanupong Promngam, Komson Maleesee, Nunthawath Charusrojthanadech, King Mongkut’s Inst of Tech, Thailand; Yoshimichi Yamamoto, Tokai Univ, Japan
138. OCEAN TECHNOLOGY XIV:
Float-over Installation 1(V. 1)
Thursday June 29 14:00 Room 7

Chair: Alan M. Wang, Offshore Oil Engineering Co., China
Co-chair: Ju-Hwan Cha, Mokpo National Univ, Korea

A Comprehensive Field Measurement for Floatover Installations
Shaohua Zhu, Wentai Yu, COOEC; Xin Li, Lei Wang, Shanghai Jiao Tong Univ; Huailiang Li, Alan M Wang, COOEC, China

Experimental Analysis of Topside Transportation with a Double-barge Float-over System
Daniele Dessi, Edoardo Faiella, INSEAN, Italy

A Model Test for Docking Operations of a Transportation Vessel during Float-over Installation
Y J Kwon, B W Nam, N W Kim, I B Park, D H Jung, H G Sung, Korea Research Inst of Ships & Ocean Engineering, Korea

A Model Test Study for DP Floatover Installation of Large Integrated Topsides
Nan Xu, Alan M Wang, Weiwei Xie, Biao Wang, COOEC; Lei Wang, Xin Li, Shanghai Jiao Tong Univ, China

Experimental Investigation on Mating Operation during Float-over Installation of a Large Topside in Waves
N W Kim, B W Nam, Y J Kwon, S K Cho, I B Park, H G Sung, Korea Research Inst of Ships & Ocean Engineering, Korea

Study on Optimization Method for Structural Safety of the Load-out Support Frame (LSF) in Float-over Installation
Yong-Wook Kim, Tae-Hwan Joung, Dong-Ho Jung, Hong-Gun Sung, Korea Research Inst of Ships & Ocean Engineering, Korea

A Development of Crane Operation Training Simulator Prototype for Offshore Installation Work at the Open Sea
Sang-moo Lee, Eung-kon Kim, Yang-ryul Choi, Xinnos Co; Ju-hwan Cha, Mokpo National Univ, Korea

139. ADVANCED SHIP TECH VII:
Powering 1 (V. 4)
Thursday June 29 14:00 Room 8

Chair: Jerzy E Matusiak, Aalto Univ; Finland
Co-Chair: R Inoue, Tokyo Univ of Marine Science & Tech, Japan

RANS Simulation of Self-Propulsion Ship Model Test Coupled with PI Controller
Haipeng Buo, Zaojian Zou, Yi Liu, Jin Cheng, Shanghai Jiao Tong Univ, China

Design and Verification of Water-jet Propulsion Pump Noise Test Device in Ordinary Environment
Zonglong Wang, Guorui Ji, Youlin Cai, MARIC, China
Design and Experimental Verification of Water-Jet Shrink-Flow Pump Based on Controllable Velocity Moment Method
Youlin Cai, Ning Li, Zonglong Wang, Guorui Ji, Marine Design & Research Inst of China, China

Numerical Simulation of the Viscous Flow in a Waterjet Intake Duct under Backward Conditions
Huili Xu, Zaojian Zou, Shanghai Jiao Tong Univ, China

Numerical Investigation on Unsteady Propeller Forces with External Axial-exitations
Minhua Shu, Ke Chen, Yunxiang You, Hongwei Wang, Wei Le, Shanghai Jiao Tong Univ, China

Numerical Investigation of Open-Water Performance of Contra-Rotating Propellers
Dongya He, Decheng Wan, Shanghai Jiao Tong Univ, China

140. GEOTECH IX: Geohazard & Liquefaction (V. 2)
Thursday June 29 14:00 Room 9
Chair: Seung-Rae Lee, KAIST, Korea
Continue

141. UNDERSEA IV: ROV, Towed Vehicles and USV (V. 2)
Thursday June 29 14:00 Room 10
Chair: Satoru Yamaguchi, Kyushu University, Japan
Co-chair: Guoha Xu, Huazhong University of Science and Technology, China

3D Nonlinear Coupled Simulation of Cable and Tow-Body System
Hyung Taek Ahn, Gwangsoo Go, Euntaek Lee, Univ of Ulsan, Korea

Track-keeping and Positioning Control in Vessel Towing Operation
Shikun Pang, Shanghai Jiao Tong Univ; Shengjie Yu, China Classification Society; Jingyang Liu, Lifu Mao, Hong Yi, Shanghai Jiao Tong Univ, China

Dynamic Bayesian Network Controller Design and Its Application on Ship Autopilot
Jian Wang, Jingyang Liu, Shikun Pang, Hong Yi, Shanghai Jiao Tong Univ, China

Numerical Analysis of the Motion of ROV Applying ANC Method to Motion of Tether Cable
Hiroyoshi Suzuki, Hiroto Tomobe, Osaka Univ; Kazuhiro Takasu, Akishima Labs (Mitsui Zosen); Asako Kuwano, Osaka Univ; Tomoya Inoue, Jyunya Ishiwata, JAMSTEC, Japan

Field Tests of an Integrated ASV/ROV Platform
Giuseppe Conte, David Scaradozzi, Daniele Mannocchi, Univ Politecnica Delle Marche, Italy
142. HYDRODYNAMICS XXIV: Tsunami 2 (V. 3)

Thursday June 29 16:20 Room 1

Chair: Mikhail M Lavrentiev, Novosibirsk State Univ, Russia
Co-Chair: ST Grilli, Univ of Rhode Island, USA

Nearshore FSO Response under Rapidly Varying Landslide Tsunami Hydrodynamic Loads
Dale R Kerper, DHI Water & Environment, USA; Hans F Hansen, DHI Water & Environment, Denmark; Shubhra Misra, Chevron; Fengyan Shi, Univ of Delaware; Pramod Rao, Chevron; James T Kirby; Univ of Delaware; Ed Willey, Chevron; Stephen Hart, Chevron North America Exploration & Production; David Ervin, Chevron, USA

Tsunami Wave Load Acting on Spherical Storage Tank on Land
Susumu Araki, Osaka Univ; Tomohiro Furuse, Toyo Construction; Shun Iwasaki, Wataru Kunimatsu, Shin-ichi Aoki, Osaka Univ, Japan

Nonlinear Finite Element Analysis of RC Walls Subjected to Tsunami and Debris Impact and Debris Impact
Atsushi Shibayama, Yoshinori Miyagawa, Naoto Kihara, Hideki Kaida, Central Research Inst of Electric Power Industry, Japan

Effect of Scour Protections Against Tsunami Overflow at a Landward Toe of Coastal Dikes
Naoki Takegawa, Yutaka Sawada, Toshinori Kawabata, Kobe Univ, Japan

Numerical Simulation of Boulder Transport by the Tsunamis and Typhoon Waves
Tso-Ren Wu, Shun-Kai Hu, Chung-Yue Wang, Chia-Ren Chu, Mei-hui Chuang, National Central Univ, Taiwan, China

Investigation of the Artificial Underwater Object's Protection Properties Using Numerical Modeling
Alexander Vazhenin, Kensaku Hayashi, Aizu Univ, Japan; Andrey Marchuk, ICM&MG SB RAS, Russia

Strong Motion Prediction During a Scenario Earthquake Along the Coast of Sea of Japan
Masaki Yamauchi, Yoshiya Hata, Osaka Univ; Akira Murata, Kanazawa Univ; Yasuko Kuwata, Kobe Univ; Maki Koyama, Gifu Univ; Tadayoshi Nakashima, Hokkaido Univ; Masakatsu Miyajima, Kanazawa Univ; Ken-ichi Tokida, Osaka Univ, Japan
143. HYDRODYNAMICS XXV:
Seakeeping Dynamics 2 (V. 3)
Thursday June 29 16:20 Room 2
Chair: Louis Diebold, Bureau Veritas, France
Co-Chair: TV Karambas, Aristotle Univ of Thessaloniki, Greece

Hydrodynamic and Wave Performance around a Ship Hull on the Free Surface
under Stokes Waves
Shengtao Chen, Dalian Maritime Univ, China

Wave-Induced Steady Forces and Seakeeping Performance of an Advancing Ship in
Oblique Seas
Ardhana Wicaksono, Masashi Kashiwagi, Osaka Univ, Japan

Experimental Investigation of Vertical Ship Motions in Irregular Head Seas due to
Slow Steaming
Tahsin Tezdogan, Anthony Romanowski, Univ of Strathclyde, UK

An Improved Method to Calculate Inertial Forces and Dynamic Loads of Whole
Ship
Zhe Cheng, Shaoxiong Zhang, Zekun Bian, Wuhan Univ of Tech, China

Effects of Non-uniform Heading Distribution and Variant Speeds on EDW
Yachong Liu, Jianmeng Wu, Wenbo Zhu, Marine Design & Research Inst. of China, China

Analysis of the Coupled Horizontal and Torsional Loads of an Ultra Large
Containership
Yuwen, Liu, Hui Li, Kaihong Zhang, Yakang Peng, Baoli Deng, Harbin Engineering
Univ, China

The Influence of Added Mass in Superyacht Vibration Analysis
Tatiana Pais, Dario Boote, Univ of Genoa, Italy

Research on Motion Characteristics and Hydrodynamic Characteristics of Fin
Stabilizer at Zero Speed
Dapeng Xiong, Detai Huang, Yong Ding, Harbin Engineering Univ, China

144. RENEWABLE ENERGY XV:
Offshore Wind - Design & Install (V. 1)
Thursday June 29 16:20 Room 3
Chair: Moo-Hyun Kim, Texas A&M Univ, USA
Co-Chair: Erik J Augestad, DNV GL, Nortway

Tailoring Support Structure Load Mitigation through Adaptive Supervisory Control
for Different Offshore Wind Turbines
Binita Shrestha, Martin Kuehn, Univ of Oldenberg, Germany

WFSV PL: An Hybrid Carbon Composite Wind Farm Supply Vessel
Dario Boote, Gianmarco Vergassola, Balerio Costa, Univ of Genova, Itlay

Optimizing Power Cable Routing in a Dynamic Seabed for Offshore Wind Farms

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Thomas J Roetert, Deltares; Bas W Borsje, Univ of Twente; Tim C Raaijmakers, Deltares, Netherlands

**A Novel Approach to Wind Turbine Installation**
Erik J Augestad, DNV GL, Notway

**A Study of New Installation Concepts for Offshore Wind Farms by Means of Simulation Model**
Abderrahim Ait Alla, Stephan Oelker, Marco Lewandowski, Michael Freitag, Klaus-Dieter Thoben, Univ of Bremen, Germany

**Challenges in Using Operational Data for Reliable Wind Turbine Condition Monitoring**
Jannis Tautz-Weinert, Simon J Watson, Loughborough Univ, UK

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**145. SUBSEA, PIPELINES, RISERS XII:**

**Panel**

**Thursday June 29 16:20 Room 4**

**Chair:** Howard H Wang, ExxonMobil Production Co., USA

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**146. HPM XI:**

**Fatigue and Fracture 3 & Tubulars (V4)**

**Thursday June 29 16:20 Room 5**

**Chair:** Stefan Herion, KoRoH GmbH, Germany

**Co-Chair:** Tomoya Kawabata, Univ of Tokyo, Japan

**Consideration on Critical Branching Condition in Brittle Crack Propagation in Steel**
Fumiaki Tonsho, Shuji Aihara, Tomoya Kawabata, Univ of Tokyo, Japan

**Numerical Simulation of SENT Tests for Welded X80 Line Pipes**
Yasuhiro Shinohara, Nippon Steel & Sumitomo Metal; Eiji Tsuru, Nippon Steel & Sumikin Technology; Takuya Hara, Nippon Steel & Sumitomo Metal, Japan

**Buckling of Multiple Inside Geometry (MIG) Hollow Sections**
Oliver Fleischer, Stefan Herion, KoRoH GmbH; Peter Lang, Stephan Scheri, Vallourec Deutschland GmbH, Germany

**Beam Element Including Local Member and Joint Plasticity Effects**
Lasse Tidemann, Steen Krenk, Technical Univ of Denmark, Denmark

**Study on Rectification Method on Cruciform Joint Exceeding IACS Fabrication Tolerance**
Sang-Woo Lee, Kyung-seok Lee, Yong-woon Kim, Daewoo Shipbuilding & Marine Engineering; Jung-sin Jae, Ki-sub Choi, Dong-ju Jeong, Innoqual Co, Korea

**Perforated Steel-to-Composite Joints under Static and Dynamic Loading**
Sarah E Mouring, US Naval Academy, USA; Luke Louca, Reuben Brambleby, Imperial College London, UK
Analytical and Computational Analysis of Grouted Connections
Efstatios E Theotokoglou, Gerogia Papaefthymiou, National Technical Univ of Athens, Greece

Thursday June 29 16:20 Room 6

Introduction: SW Hong, Maritime & Ocean Eng Research Inst, Korea

Senvion Wind Turbine on Floating Platform – Approach, Engineering Results, Projects and Prospects from a Turbine Manufacturer’s Point of View [Oral presentation]
Fabian Vorpahl, Senvion GmbH, Germany

147. RENEWABLE ENERGY XVI: Offshore Wind - Design & Energy Storage (V. 1)
Thursday June 29 16:20 Room 6

Chair: KY Hong, Maritime & Ocean Eng Research Inst, Korea
Co-Chair:

How does Accuracy of Weather Forecasts Influence the Maintenance Cost in Offshore Wind Farms?
Helene Seyr, Michael Muskulus, NTNU, Norway

Preventative Maintenance Optimization for Offshore Wind Turbine Gearbox
Jichuan Kang, Mingxin Li, Liping Sun, Mian Wang, Harbin Engineering Univ, China

Assessment of Wind/Wave Basin Capability for Emulating Active Blade Pitch and Generator Control Influence on Floating Wind Turbine Response
Andrew J Goupee, Christopher K Allen, Univ of Maine, USA

Wind Tunnel Validation of a Wind Observer for Wind Farm Control
Filipo Campagnolo, Technical Univ of Munich, Germany

About the Ageing within Lithium-ion Battery Systems
Thorsten Grün, Karlsruhe Inst of Tech, Germany

Performance Evaluation of Household Li-Ion Battery Storage Systems
Nina Munzke, Bernhard Schwarz, Karlsruhe Inst of Technology, Germany
148. OCEAN TECHNOLOGY XV:
Float-over Installation Installation 2 (V. 1)
Thursday June 29 16:20 Room 7

Chair: Bo Woo Nam, KRISO, Korea

Experimental Analysis of the Station Keeping Response of a Double-barge Float-over System with an Elastically Scaled Physical Model
Daniele Dessi, Edoardo Faiella, INSEAN; Corrado Pigna, Cristiano Celli, Thiago Miliante, Enrico Di Paol, Technip, Italy

Dynamic Analysis of the Surface Casing during Installation into a Pre-Salt Subsea Well
Marcio Yamamoto, Ken Takagi, Ryota Wada, Univ of Tokyo, Japan; Cristiano Agostini, Edgard B Malta, Univ of Sao Paulo, Brazil

Inverse Kinematics of 2-DOF Rotary Crane Systems Fixed on Two Floating Barges for Collaborative Tasks during Offshore Installation Operations
Jun-Hyeok Bae, Ju-Hwan Cha, Sol Ha, Ming-woo Koo, Mokpo National Univ, Korea

Modeling Patterns for Performance Analyses of Offshore Production systems
Huixing Meng, Ecole Polytechnique; Leila Kloul, Univ de Versailles, France; Antoine Rauzy, NTNU, Norway

Analysis of Shallow Conductor Dynamics and Subsea Wellhead Stability Considering Sand Liquefaction
Deqiang Tian, Honghai Fan, Chaowei Li, Yuhan Liu, Zixiang Wen, China Univ of Petroleum-Beijing, China

Fatigue Analysis of Rigid Locked Wellhead
Vivek Jaiswal, Brian Healy, Lifeng Feng, Partha Sharma, DNV GL, USA

149. ADVANCED SHIP TECH VIII:
Powering 2 (V. 4)
Thursday June 29 16:20 Room 8

Chair: M. Felli, INSEAN, Rome, Italy
Co-chair: Zaojian Zou, Shanghai Jiao Tong Univ, China

Simulation of a Ship Propulsion System Performance during Manoeuvring in Shallow Waters
Panagiotis Mizythras, Christos Pollalis, Evangelos Boulougouris, Univ of Strathclyde, UK

Feasibility Study on Thrust Produced by Stabilizing Fins in Waves
Jerzy E Matusiak, Aalto Univ; Patrik P Rautaheimo, Elomatic Ltd, Finland

Non-Cavitation Noise Numerical Simulation of Propeller behind Ship Hull
Shuai Sun, Xin Chang, Hongyu Zhang, Liyu Ye, Harbin Engineering Univ, China

Experimental Studies on Hydrodynamics of a Floater-Adjusted Wave Propulsion Device
Hongbin Hao, Harbin Engineering Univ, China; Qingwei Ma, City Univ London, UK; Kangping Liao, Xing Zheng, Harbin Engineering Univ, China

**Prediction of Hydrodynamic Performance for Rim-driven Thruster**
Tao Yang, Ziru Li, Wei He, Keqiang Chen, Wuhan Univ of Tech, China

**Modeling and Analysis of Under-actuated Parallel-Link Mechanism for Motion Reduction Device of Ship**
Akihiro Morinaga, Ikuo Yamamoto, Nagasaki Univ, Japan

**Effect of Rotating Disc and Flow Separation Phenomena on the Performance of a Marine Cycloidal Propeller**
J Joseph Prabhu, Vishwanath Nagarajan, Rabius Summy mohammed, Om Prakash Sha, IIIT Kharagpur, India

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**150. GEOTECH X: Panel**
Thursday June 28 16:20 Room 9
Chair: Haydar Arslan, ExxonMobil Production Co., USA
Co-chair: Yun Wook Choo, Kongju National Univ, Korea

**151. UNDERSEA V: Panel (V. 2)**
Thursday June 29 16:20 Room 10
Chair: S Yamaguchi, Kyushu Univ, Japan

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**FRIDAY 08:00 – 17:00**

**152. RENEWABLE ENERGY XVII: IEA Wind OC5 Workshop**
Friday June 30 08:00 Sandpebble E
Chair: Fabian Vorpahl, SEVION, Germany
Co-chair: Amy Robertson, NREL, USA

**153. RENEWABLE ENERGY XVIII: IEA Wind OC5 Workshop**
Friday June 30 10:30 Sandpebble E

**154. RENEWABLE ENERGY XIX: IEA Wind OC5 Workshop**
Friday June 30 14:00 Sandpebble E

**155. RENEWABLE ENERGY XX: IEA Wind OC5 Workshop**
Friday June 30 16:20 Sandpebble E