TECHNICAL PROGRAM

The Fifteenth (2005) International Offshore and Polar Engineering Conference

Seoul, Korea, June 19–24, 2005

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-2005 Technical Program Committee (TPC) received in writing before January 5, 2005 are reflected in this program. Final corrections will be updated in the Conference Proceedings and the Final Program. Proceedings CD-ROM will be available as a set of 4 volumes (3,200 pp. est.) from ISOPE during and after the Conference.

SUNDAY, June 19

Conference Reception

18:00 COEX **Intercontinental** Hotel

MONDAY 08:30

Conference Opening Addresses: ISOPE President

Welcome Address
Lee, Ku Taek, Chairman and Chief Executive Officer, POSCO, Seoul, Korea.

1. OFFSHORE INDUSTRY REVIEW (V. 1)

Monday June 20 08:30 Grand Conference, 4F

Chair: Hong, S W, Korea Res Inst of Ships and Ocean, KORDI, Korea
Co-Chair: Bowen, R R, ExxonMobil Development Company, USA

Natural Gas Demand and Transport Outlook – 2005
Petersen, C W, Special Project Coordinator, ExxonMobil Upstream Research Co; Bowen, R R, Gas Technology Advisor, ExxonMobil Development Company, Houston, TX, USA

Sakhalin – A New Source of Energy for Asia Pacific Region
Meehan, D, Project Manager, Sakhalin Energy Investment Co. Ltd, Prymorye Krai, Russia

Offshore Technology: A Heavy Industry Overview
Min, Keh-Sik, Vice Chairman, Hyundai Heavy Industries, Ulsan, Korea

North Sea Pipelines – Pushing the Technology Front
Berge, J O, Chief Engineer, Statoil ASA, Stavangar, Norway

LNG Terminal Technology in Korea
Kho, Young-Tae, Sr. Vice President, KOGAS, Incheon, Korea

MONDAY 13:30

Plenary Presentation I (V.1)

Monday June 20 13:30 **310BC**

MH21 National Project: Progress in Methane Hydrate R&D
Komai, T, National Inst of AIST, Japan

Plenary Presentation II (V.2)

Monday June 20 13:30 **320BC**

Stability of Waterfront Ground during Earthquakes
Ishihara, Kenji, Chuo Univ/Tokyo Univ of Science, Japan

2. ADVANCED NATURAL GAS TRANSPORT I: Pipeline & Gas-to-Liquids (V. 1)

Monday June 20 14:30 310BC

Chair: Ayer, R, ExxonMobil Research and Engineering, USA
Co-Chair: Koo, J, ExxonMobil Research and Engineering, USA

Introductory Remarks
Ayer, R, ExxonMobil Research and Engineering, USA

Advances in High Strength Technology for Natural Gas Transmission
Jenkins, A K, Glover, A G, TransCanada Pipelines, Canada

A New Generation of Ultra-high Strength X100/120 Pipelines: A Breakthrough for Economic Long-distance Gas Transportation
Pontremoli, M, Centro Sviluppo Materiali, Italy

Mixed Testing and Simulation Program to Assess High Grade X100 Steel Line Pipes Safety Margins Regarding Propagating Axial Crack Arrest
Perrin, G, Institut Francais du Petrole; Pineau, A, Tanguy, B, ENSMP; Luu, T T, Institut Francais du Petrole; Besson, J, ENSMP; Martinez, M, Odru, P, Institut Francais du Petrole, France

ExxonMobil's Advanced Gas-To-Liquids Technology – AGC-21
Ansell, L M, Bienstock, M G, Fiato, R A, Quinlan, C W, ExxonMobil Research & Engineering, USA

Development of Dimethyl Ether Production Technology
Ohno, Y, JFE Holdings, Japan

Metal Dusting – Severe Problem in Operation of Syngas Generation for GTL Plant
Hirotani, K, Toyo Engineering, Japan

LNG in India: Execution of Dahej Vijaipur Pipeline Project
Tripathi, B C, Prasad, A, GAIL (India) Limited, India

3. HYDRO I: Extreme Waves (V. 3)

Monday June 20 14:30 311BC

Chair: Grilli, S T, Univ of Rhode Island, USA
Co-Chair: Tanizawa, K, National Maritime Research Inst, Japan

Extreme Wave Generation in Laboratory Wave Tank
Waseda, T, Rheem, C K, Univ of Tokyo; Tanizawa, K, National Maritime Research Inst; Sawamura, J, Yuhara, T, Univ of Tokyo; Tomita, H, National Maritime Research Inst; Kinoshita, T, Univ of Tokyo, Japan

Creation and Annihilation of Extremely Steep Transient Wave
Ten, I K, Tomita, H, National Maritime Research Inst, Japan

On a New Formulation of Bichromatic Nonlinear Wave Profiles and Its Numerical Study
Jang, T S, Kwon, S H, Pusan National Univ, Korea

Experimental Studies on Energy Dissipation in Directional Breaking Waves
Meza, E, Mexico National Polytechnic Inst, Mexico ; Hong, K Y, Korea Research Inst of Ships and Ocean Engineering, Korea ; Liu, S X, Dalian Univ of Tech, China ; Zhang, J, Texas A&M Univ, USA

Wave Energy Focusing in a Three-dimensional Numerical Wave Tank
Fochesato, C, Universite Bordeaux 1; Dias, F, Ecole Normale Superieure de Cachan, France; Grilli, S T, Univ of Rhode Island, USA

Diffraction Effects in a Phase-averaged Wave Model
Chen, G Y, National Sun Yat-sen Univ; Chang, H W, Industrial Tech Resesarch Inst, Taiwan, China

Numerical Estimations of Wave Reflection Coefficient for Irregular Waves over Submerged Obstacles
Shih, R S, Tung Nan Inst of Tech; Chou, C R, Yim, J, National Taiwan Ocean Univ, Taiwan, China

Probability of the Occurrence of Freak Waves in Deep Water
Zhang, S S, Zhang, J, Texas A&M Univ, USA

4. GEOTECH I: Foundations (V. 2)

Monday June 20 14:30 320BC

Chair : Bang, S C, South Dakoda School of Mines and Tech, USA

Numerical Modeling of Suction Pile Installation under Self-weight and Suction in Caspian Sea
Fakharian, K, Soltanmohammadlou, A, Amirkabir Univ of Tech, Iran

Analysis Technique of Offshore Structure-ground System with Considering Change of Shear Modulus of Sand Measured by Laboratory Testing
Yokohama, S, Miura, S, Hokkaido Univ; Kawamura, S, Muroran Inst of Tech; Dashdorj, S, Hokkaido Univ, Japan

Bearing Capacity Improvement of Anisotropic Ground beneath Coastal Structure
Kawamura, S, Muroran Inst of Tech; Miura, S, Hokkaido Univ, Japan

Analysis of Partially Embedded Intake Tower
Sharp, M K, Matheu, E E, US Army Engineer Research & Development Center, USA

Field Load Tests on Model Pile Group
Lee, Y N, Park, Y H, Hyundai Inst of Construction Tech; Lee, S H, Sunmoon Univ, Korea

Cyclic Bearing Capacity of the Single Bucket Foundation on Soft Clay Strata
Wang, J H, Li, C, Tianjin Univ, China; Moran, K, Univ of Rhode Island, USA

In-situ Stabilisation of Road Base Using Cement: A Case Study in Malaysia
Chai, G W K, Oh, E Y N, Balasubramaniam, A S, Griffith Univ, Australia

Study on Bearing Capacity of Bucket Foundation in Soft Clay under Cyclic Loads
Liu, Z W, Qin, C R, Tianjin Univ, China

5. HYDRO II: BEM & Seakeeping (V. 3)

Monday June 20 14:30 310A

Chair: Choi, H S, Seoul National Univ, Korea
Co-Chair: Huang, S, Univ of Glasgow and Strathclyde, UK

Application of the Accelerated Desingularized BEM in Water Wave Problems
Ning, D Z, Teng, B, Dalian Univ of Tech, China

Wave Potential in Representation of 3D Flow about a Ship Advancing through Regular Waves in Deep Water
Noblesse, F, NSWC-CD; Yang, C, George Mason Univ, USA

Dispersion Curves for Diffraction-radiation by a Ship Advancing through Regular Waves in Finite Water Depth
Noblesse. F. NSWC-CD; Espinosa, R, Yang, C, Lohner, R, George Mason Univ, USA

Some Considerations on Forward-speed Seakeeping Calculations in Frequency Domain
Kim, B K, American Bureau of Shipping, USA

Some Aspects of Multibody Interactions in Seakeeping
Malenica, S, Orozco, J-M, Chen, X B, Bureau Veritas, France

Scale Effects in Wave Run-up Experiments
Thiagarajan, K P, Morris-Thomas, M T, Paterson, F, Univ of Western Australia, Australia

New Estimation Method of Wind Forces and Moments Acting on Ships Based on Mathematical Model
Fujiwara, T, Ueno, M, Nimura, T, National Maritime Research Inst, Japan

Bow Wave Height
Dane, H M, Noblesse, F, NSWC-CD, USA

6. DEEP-OCEAN VEHICLES & NAVIGATION I (V. 2)

Monday June 20 14:30 311A

Chair : Koterayama, W, Kyushu Univ, Japan

The Development and Sea Trials of KAIKO7000
Murashima, T, Nakajoh, H, Yoshida, H, JAMSTEC; Yamauchi, N, Sezoko, H, Nippon Marine Enterprises, Japan

A Study on the Pressure Vessel Design, Structural Analysis and Pressure Test of a 6,000 m Depth-rated Unmanned Underwater Vehicle
Jeong, T H, Noh, I S, Chungnam National Univ; Lee, C M, Lee, P M, Yang, S I, Hong, S W, Korea Res Inst of Ships and Ocean, KORDI, Korea; Aoki, T, Hyakudome, T, JAMSTEC, Japan; Kang, I G, Yoon, G H, Han, S C, Daeyang Electric, Korea

Deep-sea Cruising AUV "URASHIMA" – Challenge to the Record for the Autonomous Navigation
Ishibashi, S, Aoki, T, Yamamoto, I, Tsukioka, S, Yoshida, H, Hyakudome, T, Sawa, T, Inada, T, JAMSTEC; Ishikawa, A, Nippon Marine Enterprises; Hirokawa, K, Mitsubishi Heavy Industries, Japan

Prospective Deep Sea Detailed Survey with the AUV "Urashima"
Tsukioka, S, Aoki, T, Yamamoto, I, Yoshida, H, Hyakudome, T, Ishibashi, S, Sawa, T, JAMSTEC; Ishikawa, A, Nippon Marine Enterprises; Hirokawa, K, Mitsubishi Heavy Industries, Japan

Design of Remotely Operated Vehicle (ROV) for Underwater Ship Hull Inspection and Cleaning
Sur, J, Ryu, J S, Korea Naval Academy, Korea

7. TUBULAR STRUCTURES: STATIC (V. 4)

Monday June 20 14:30 320A

Chair: Choo, Y S, National Univ of Singapore, Singapore
Co-chair: Van der Vegte, G J, Kumamoto Univ, Japan

Structural Characteristics of Offshore Damaged Tubulars
Cho, S R, Univ of Ulsan, Korea

Ultimate Strength Analysis of Dented Tubular Members
Chun, T B, Korea Res Inst of Ships and Ocean, KORDI; Nho, I S, Chungnam National Univ, Korea

Design Recommendations for RHS K-joints with 100% Overlap
Cheng, Y, Tsinghua Univ, China; Liu, D K, Wardenier, J, Delft Univ of Tech, The Netherlands

Design Recommendations for RHS K-joints with 50% Overlap
Liu, D K, Delft Univ of Tech, The Netherlands; Chen, Y, Tsinghua Univ, China; Wardenier, J, Delft Univ of Tech, The Netherlands

Shear Stiffness and Maximum Shear Stress of Round Tubular Members
Hoogenboom, P C J, Spaan, R, Scarpas, T, Delft Univ of Tech, The Netherlands

The Strength of Concrete Filled CFRP-steel Tubes under Axial Compression
Zhao, Y H, Gu, W, Dalian Maritime Univ; Xu, J, Shenyang Architecture Univ; Zhang, H T, Northeast Univ, China

8. COMPOSITES & SMART STRUCTURES I (V. 4)

Monday Junr 20 14:30 321C

Chair: Dutta, P K, ERDC-CRREL, USA
Co-Chair: Maneepan, K, Univ of Southampton, UK

Waterfront Application of FRP and Navigation Buoys
Fyfe, E, Brokken, S, Yoo, Y H, Fyfe Co, USA

The Effect of Surface Ply Stiffness on the Energy Absorption of Curved Carbon Fibre Composites
David-West, O S, Nash, D H, Banks, W M, Univ of Strathclyde, UK

Reliability and Durability of Polymer Matrix Composites in Offshore and Polar Applications
Karbhari, V M, Univ of California San Diego, USA

Effects of Si02 Additives on Fabrication Properties of LPS-SiC Ceramics
Jung, H C, Yoon, H K, Dongeui Univ, Korea; Park, J S, Inst of Energy Science and Tech; Kohyama, A, Kyoto Univ, Japan

Effects of Process Temperature on Liquid Phase Sintering SiC Ceramics
Kim, D H, Jung, H C, Yoon, H K, Dongeui Univ, Korea; Park, J S, Inst of Energy Science and Tech; Kohyama, A, Kyoto Univ, Japan

Evaluation of Composite Seawall Made of Pultruded Sheet Piling
Shao, Y X, McGill Univ, Canada

Design, Characterization and Analysis of Polyvinyl Chloride Sheetpiles for Waterfront Protection
Vaidya, U K, Villalobos, A, Serrano-Perez, J C, Univ of Alabama at Birmingham; Dutta, P K, ERDC-CRREL, USA

Using Smart Coatings in Offshore Structures
Wheat, H G, Liu, G, Univ of Texas at Austin, USA

9. OCEAN ENERGY I: Offshore Wind (V. 1)

Monday June 20 14:30 304A

Chair: Herion, S, Karlsruhe Univ, Germany
Co-Chair: Cho, K N, Hongik Univ, Korea

Design of Monopile Foundations for Large Offshore Windturbines – Experiences from the First Projects Offshore the British Coast
Gjersøe, N F, Brendstrup, C, LICEngineering, Denmark

Evaluation of Different Damage Prediction Methods for Support Structures of Offshore Wind Energy Converters
Kleineidam, P, Schaumann, P, Univ of Hannover, Germany

Certification of Offshore Wind Farms
Klose, M, Dalhoff, P, Germanischer Lloyd WindEnergie, Germany

Intelligent Wind Turbine Generator with Tandem Rotors Applicable to Offshore Wind Farm
Kanemoto, T, Galal, A M, Inada, Y, Konno, Y, Kyushu Inst of Tech, Japan

Applications of Long Distance HVDC-/AC Cable Transmission Systems for Grid Access to Remote Offshore Oil&Gas/Windpark Installations
Christl, N, Weinhold, M, SIEMENS, Germany

10. TANKERS: Design & Construction (V. 4)

Monday June 20 14:30 304B

Chair: Liu, Y, FMC SOFEC, USA
Co-Chair: Pu, Y C, Univ of Newcastle upon Tyne, UK

Challenging Port Deadweight Limitations for Newly Designed Crude Oil and Product Carriers
Radwan, A M, Saudi Aramco, Saudi Arabia

Ground Build Methodology for Cargo Oil Tankers
Yang, Y T, Yoon, K Y, Hyundai Heavy Industries, Korea

Time-variant Corrosion Degradation, Hull Girder Strength and Fatigue Assessment for Aging Double Hull Tankers
Ok, D, Pu, Y C, Univ of Newcastle upon Tyne, UK

Structural Sensitivity Analysis of On-ground Build Cargo Oil Tankers
Yang, Y T, Yoon, K Y, Shin, M K, Hyundai Heavy Industries, Korea

A Study on Optimum Size of Big Bracket in Cargo Holds of Crude Oil Tanker
Shin, S H, Lee, J H, Choe, I H, Kim, D H, Kwon, J C, Hyundai Heavy Industries, Korea

Optimum Design of Bulbous Bow for ULCS
Lee, K J, Sarath, E S, Chosun Univ, Korea

TUESDAY 08:00

11. ADVANCED NATURAL GAS TRANSPORT II: CNG and LNG (V. 1)

Tuesday June 21 08:00 310BC

Chair: Noble, P G, ConocoPhillips – Qatar Petroleum, Qatar
Co-Chair: Yang, Y M, Korea Gas Corporation, Korea

CNG – Large-scale Marine Transport

White, C N, Britton, P, EnerSea Transport, USA; Murata, M, Doi, N, Terada, Y, Nippon Steel, Japan

The Knutsen OAS Shipping Pressurized Natural Gas Carrier (PNG)
Lothe, P, Vik, A, Strom, N K. Knutsen OAS Shipping, Norway

CNG Transportation Using Fibre Reinforced Plastic Pressure Vessels
Campbell, S, Trans Ocean Gas, Canada

ABS Development of a Guide for Compressed Natural Gas Carriers
Rynn, P G, American Bureau of Shipping, USA

An Overview of Design and Construction of LNG Carriers
Lee, C H, Hyundai Heavy Industries, Korea

Leading Technology for Next Generation of LNG Carriers
Wiernicki, C, Lee, H S, ABS, USA

Critical Design Issues of New Type and Large LNG Carriers
Han, S K, Heo, J H, Lee, S G, Daewoo Shipbuilding & Marine Engineering, Korea

12. HYDRO III: Design Waves (V. 3)

Tuesday June 21 08:00 311BC

Chair: Wolf, J, Proudman Oceanographic Laboratory, UK
Co-Chair: Kwon, S H, Pusan National Univ, Korea

Evidences of Typhoon/Hurricane Swell Doppler Effect
Liang, N K, National Taiwan Univ, Taiwan, China

Wave Climate in the Northeast of Taiwan
Yim, J Z, Chou, C R, National Taiwan Ocean Univ; Huang, W P, Sinotech, Taiwan, China

Waves and Climate Change in the Sea of the Hebrides
Wolf, J, Proudman Oceanographic Laboratory; Woolf, D, Southampton Oceanography Centre, UK

Statistical Characteristics of Winds and Waves around Japan
Tsujimoto, M, Ishida, S, National Maritime Research Inst, Japan

On the Prediction of Extreme Waves That an Ocean-going Ship Encounters at Sea
Shinkai, A, Kyushu Univ; Ikeda, R, Namura Shipbuilding; Matsuo, K, Shin, S J, Kyushu Univ, Japan

Fetch-limited Growth of Wind Waves in Deep Water
Guan, C L, Zhang, S F, Sun, J, Ocean Univ of China, China

13. GEOTECH II: Centrifuge & Modeling (V. 2)

Tuesday June 21 08:00 320BC

Chair : Allersma, H, Delft Univ. of Tech, The Netherlands

Centrifuge Model Tests on Embedded Suction Anchor Pullout Capacity
Kim, K O, Kim, Y S, Kim, T H, Daewoo Inst of Construction Tech; Cho, Y K, Daewoo Engineering & Consultant, Korea

Centrifuge Modelling of Scouring Ice Keels in Clay
Allersma, H G B, Schoonbeek, I S S, Delft Univ of Tech, The Netherlands

Shaking Table Test of Reinforced Earth Walls
Nabeshima, Y, Osaka Univ, Japan

Offshore Testing Using the Osterberg-cell Test Method
Hayes, J A, Loadtest Inc, USA

Centrifuge Model Test on Ground Water Pollution due to Construction of Pile Foundations in the Waste Disposal Site
Amatya, B L, Khan, M R A, Takemura, J, Kusakabe, O, Tokyo Inst of Tech, Japan

A Dynamic Loading Device for Suction Bucket Foundations in Centrifuge
Lu, X B, Inst of Mechanics, CAS; Zhang, J H, Tsinghua Univ, China

Centrifuge Model Tests on Embedded Suction Anchors in Sand
Bang, S, South Dakota School of Mines & Tech, USA; Kim, Y S, Cho, Y, Daewoo Engineering & Construction, Korea

14. MetOcean (V. 3)

Tuesday June 21 08:00 310A

Chair: Krogstad, H, NTNU, Norway
Co-Chair: Olagnon, M, IFREMER, Plouzané, France

The Statistical Distributions of Nonlinear Ocean Waves
Liu, J D, Korgstad, H E, Norwegian Univ of Science and Tech; Trulsen, K, Univ of Oslo; Dysthe, K, Socquet-Juglard, H, Univ of Bergen, Norway

On the Effect of Wind and Turbulence on Ocean Swell
Jenkins, A D, Bjerknes Centre for Climate Research, Norway; Ardhuin, F, SHOM, France

An Analytical Assessment of the POT and Annual Maxima Methods for Calculating Return Periods of Wave Height
Soukissian, T, Kalantzi, G, Hellenic Center for Marine Research, Greece

The Implementation of One-way and Two-way Atmosphere-ice-ocean Coupled Models over an Arctic Polynya
Jenkins, A D, Bjerknes Centre for Climate Research; Budgell, P, Inst of Marine Research; Sandvik, A D, Smedsrud, L H, Bjerknes Centre for Climate Research, Norway

Combined Return Values Estimation of Wind Velocity and Wave Height with Poisson Bivariable Log-normal Distribution
Dong, S, Ning, M, Ocean Univ of China, China; Wei, Y, Univ of Hawaii, USA

Comparison of Third Generation Wave Models, WAM and SWAN, for Coastal Wave Hindcasting
Hashimoto, N, Port and Airport Research Inst; Suzuyama, K, ECOH Corp; Kawaguchi, K, MLIT, Japan

15. DEEP-OCEAN VEHICLES & NAVIGATION II (V. 2)

Tuesday June 21 08:00 311A

Chair : Momma, H, JAMSTEC, Japan
Co-Chair: Lee, P M, Korea Res Inst of Ships and Ocean, KORDI, Korea

A Study on the Sliding Mode for Diving and Heading Control a Heavy Weight Torpedo
Vuilmet, C, DCN Armes Sous-Marines, France

A Novel Approach to Online Underwater Path Planning with Particle Simulation System
Nip, A M, Choi, S K, Univ of Hawaii, USA

Obstacle Avoidance Strategy for Multiple Unmanned Underwater Vehicles
Lee, K H, Naval Surface Warfare Center-Panama City, USA

An Integrated Navigation System of Underwater Vehicles with Range Measurement
Lee, P M, Kim, S M, Choi, H T, Korea Res Inst of Ships and Ocean, KORDI, Korea

Development of Autonomous Underwater Vehicle with a Visual Servo System
Park, J Y, Kim, J Y, KAIST; Lee, P M, Jun, B H, Korea Res Inst of Ships and Ocean, KORDI, Korea; Oh, J H, KAIST, Korea

Analysis of Normal Mode Vibration of UUV Support System Considering Pre-stress Effect
Cho, K N, Kim, M, Hongik Univ; Song, H C, Seoul National Univ, Korea

A Study on the Structural Design and Analysis of Unmanned Underwater Vehicle
Nho, I S, Chung, T H, Chungnam National Univ; Lee, P M, Korea Res Inst of Ships and Ocean, KORDI, Korea

16. TUBULAR STRUCTURES: Fatigue (V. 4)

Tuesday June 21 08:00 320A

Chair: Marshall, P W, MPH Systems Engineering, USA
Co-chair: Lee, B J, POSCO, Korea

Cyclic Performance of Completely Overlapped Tubular Joints
Yang, Y, Gho, W M, Nanyang Technological Univ, Singapore

Thickness Effect in Welded Joints – A Review
Mashisri, F R, Zhao, X L, Monash Univ, Australia

Development and Validation of a 3-D Fracture Mechanics Model for Thick-walled CHS T-joints
Oomens, M, Romeijn, A, Wardenier, J, Delft Univ of Tech; Dijkstra, O, TNO-BOUW, The Netherlands

A Study on the Fatigue Crack in Large-scale Tubular Joints for Offshore Structures
Im, S W, Chang, I H, RIST; Park, K K, Jo, C H, Inha Univ; Kim, K Y, POSCO, Korea

17. COMPOSITES & SMART STRUCTURES II (V. 4)

Tuesday Junr 21 08:00 321C

Chair: Knapp, R H, Univ of Hawaii, USA
Co-Chair: Karbhari, V M, Univ of California San Diego, USA

Accelerated Aging Test of Composite Reinforced Concrete Blocks
Marshall, O, ERDC-Construction Eng Research Lab; Dutta, P K, ERDC-CRREL, USA

Deterioration of Bond Integrity between Repair Materials and Concrete due to Thermal Incompatibilities
Al-Ostaz, A, Univ of Mississippi, USA

Reinforced Concrete Model for Low Reinforcement Ratios
Hoogenboom, P C J, Voskamp, W, den Uijl, J A, Delft Univ of Tech, The Netherlands

Effects of Frost Action on Concrete Strength
Tapkin, S, Arioz, O, Tuncan, M, Anadolu Univ, Turkey

Strengthening of Rectangular Reinforced Concrete Plates with Fiber Reinforced Plastics
Lin, F M, Hu, H T, National Cheng Kung Univ, Taiwan, China

Physical and Mechanical Characteristics of Polyurethane Foam Insulators Blown by HFCs
Lee, Y B, Choi, S H, Choi, G H, Korea Gas Corp; Kim, S B, Kyonggi Univ, Korea

Effects of Sulfates on the Physical Properties and Durability of Portland Cement Mortars
Tuncan, M, Kilinc, K, Anadolu Univ; Uyan, M, Istanbul Technical Univ; Arivz, V, Anadolu Univ, Turkey

Effects of Sulfates on the Strength of Portland Cement Mortars
Killinc, K, Anadolu Univ; Uyan, M, Istanbul Technical Univ; Arivz, V, Anadolu Univ, Turkey

18. OCEAN ENERGY II: Waves (V. 1)

Tuesday June 21 08:00 304A

Chair: Hong, K Y, Korea Res Inst of Ships and Ocean, KORDI, Korea
Co-Chair: Suzuki, M, Univ of Tokyo; Japan

Dynamic Behavior of Novel Vertical Axis Tidal Current Turbine: Numerical and Experimental Investigations
Coiro, D P, Nicolosi, F, De Marco, A, Melone, S, Montella, F, Univ of Naples "Federico II", Italy

Optimal Damping Profiles for a Heaving Buoy Wave-energy Converter
Nolan, G A, Ringwood, J V, Butler, S, National Univ of Ireland, Maynooth, Ireland

Investigation of Seasonal Variation of Wave Energy Density around Jeju Sea Based on Long-term Simulated Wave Data
Hong, K Y, Shin, S H, Korea Res Inst of Ships and Ocean Eng, KORDI; Ryu, H J, Hongik Univ, Korea

Experimental Study on Wave Overtopping Discharge in Sloping Structures for Wave Energy Converter
Shin, S H, Hong, K Y, Korea Res Inst of Ships and Ocean Eng, KORDI, Korea

Design of a Stand Alone Wave Energy Plant
Muthukumar, S, Desai, R, Jayashankar, V, Santhakumar, IID Madras, India; Setoguchi, T, Saga Univ, Japan

A Proposal of Energy Extracting Float
Hadano, K, Koirala, P, Watanabe, M, Yamaguchi Univ, Japan

19. MECHANICS & MEASUREMENTS (V. 4)

Tuesday June 21 08:00 304B

Chair: Fujimoto, Y, Hiroshima Univ, Japan

Crack Detection in Offshore Structures Using Wavelet Transform and Dynamic Characteristics
Zhang, Z D, Li, D S, Wang, D Y, Shanghai Jiao Tong Univ, China

Fatigue Assessment Alternative Using Damage Mechanics Approach
Lee, J M, Paik, J K, Kim, M H, Seo, J G, Pusan National Univ, Korea

Dynamic Buckling of Cracked Beams Subject to Axial Impacting
Tang, W Y, He, Y S, Zhang, S K, Shanghai Jiao Tong Univ, China

Estimation of Surface Crack Depth Based on the Measurement of Crack Opening Deformation
Yue, J X, Fujimoto, Y, Setyanto, T A, Hiroshima Univ, Japan

Strain Measurement in Small Regions by the Use of Tack-like Electrode on Piezoelectric Element

Liu, G, Fujimoto, Y, Setyanto, T A, Hiroshima Univ, Japan

Fatigue Life Estimation of a Ro-Ro Carrier Using Stochastic Approach
Park, S G, Jun, M J, Han, S K, Heo, J H, Daewoo Shipbuilding & Marine Engineering, Korea

TUESDAY 10:45

20. ADVANCED NATURAL GAS TRANSPORT III: Pressurized LNG (V. 1)

Tuesday June 21 10:40 310BC

Chair: Meehan, D, Sakhalin Energy Investment Co. LTD, Russia

Pressurized LNG: A New Technology for Gas Commercialization
Bowen, R R, Papka, S D, Gentry, M C, Leger, A T, Nelson, E D, ExxonMobil Upstream Research, USA

Metallurgical Design of Steel Plates with Advanced Cryogenic Properties for Fabrication of Pressurized LNG Containers
Ayer, R, Koo, J Y, Bangaru, N V, ExxonMobil Research & Engineering; Ford, S J, Farah, A M, ExxonMobil Upstream Research, USA

Pressurized LNG: Prototype Container Fabrication
Fairchild, D, Biery, N E, Lillig, D B, Farah, A M, Sisak, W J, ExxonMobil Upstream Research, USA

21. HYDRO IV: Nonlinear Waves (V. 3)

Tuesday June 21 10:45 311BC

Chair: Kim, C H, Texas A&M Univ, USA
Co-Chair: Powers, E J, Univ of Texas at Austin, USA

Evaluation of Nonlinear Local Wave Loads on a Fixed Structure
Teigen, P, Statoil, Norway

Numerical Modeling of Nonlinear Surface Waves Caused by Surface Effect Ships
Sung, H G, Korea Res Inst of Ships and Ocean, KORDI, Korea; Grilli, S T, Univ of Rhode Island, USA

Time-domain Prediction of Non-linear Ship Motions and Loads in Large Waves Using a High Order Panel Method
Qian, K, Wang, Y Y, Dalian Univ of Tech, China

Propagation of Ship Waves on Slope
Dam, T K, Tanimoto, K, Akagawa, Y, Saitama Univ, Japan

Application of B-Spline Based Higher-order Panel Method to Inviscid Flow Problems
Lee, C S, Kim, G D, Chungnam National Univ, Korea

A Power Flow Design and Control Method Based on the Power Flow Mode Theory with Applications to Vibration Controls
Xiong, Y P, Xing, J T, Price, W G, Univ of Southampton, UK

System Identification of Offshore Structures Using Empirical Mode Decomposition
Varadarajam, N, Sea Engineering; Nagarajaiah, S, Rice Univ, USA

22. GEOTECH III: Soil Properties I (V. 2)

Tuesday June 21 10:45 320BC

Chair : Brandes, H G, Univ of Hawaii, USA

Magnetic Resonance Imaging Observation of Changes in Water Contents of Clayey Soils during Drying and Absorption
Tanaka, M, Port and Airport Research Inst; Kamei, T, Shimae Univ; Ando, Y, Shimae Prefecture, Japan

Evaluation on the Seismic Performance of Landing Pier with Batter Piles
Jang, I S, Kwon, O S, Park, W S, Jeong, W M, KORDI, Korea

Characteristics of Strength in Marine Clay by Electro-Grouting Injection
Kim, S S, Han, S J, Kim, B I, Jung, S Y, Hanyang Univ, Korea

Study on the Visualization of Soil Turbulence Surrounding the Model Pile Using Thermography
Arai, M J, Fujii, M, Hashimoto, Y, Tokai Univ, Japan

Application of Fuzzy k-mean Cluster and Fuzzy Similarity in Soil Classification
Chen, J-W, Chen, C H, National Cheng Kung Univ; Chen, S C, Public Construction Commission, Taiwan, China

Ground Improvement System with Effective Reuse of High Water Content Soils
Tsuboi, H, Harada, K, Fukada, H, Fudo Construction; Matsui, T, Fukui Univ of Tech, Japan

23. COASTAL I: Sediment (V. 3)

Tuesday June 21 10:45 310A

Chair: Deguchi, I, Osaka Univ, Japan
Co-Chair: Juang, J T, Chienkuo Tech Univ; Taiwan, China

A Two-dimensional Vertical Finite-element Mathematical Modeling of Sediment Transport due to Tidal Flow
Li, S S, Li, G J, Tianjin Univ; Shi, Z, Shanghai Jiao Tong Univ, China

A New Criterion to Design the Pennants on an Artificial Beach, after Nourishment, Referring to Wave Climate
Taramasso, A C, Grosse, B, Univ of Genoa, Italy; Passalacqua, P, Univ of Minnesota, USA

Development of Computational Method of Sand Transport in an Oscillatory Flow
Kan, S, Katsuragi, K, Baba, N, Kitaura, K, Osaka Prefecture Univ, Japan

Dynamic Response of Large Diameter Cylinder Sunk into Sandy Seabed due to Regular Wave
Li, S S, Han, H S, Wang, J F, Qin, C R, Tianjin Univ, China

Relative Importance of Tides and Waves for Sediment Transport on the Intertidal Mudflats
Nakamichi, M, Nishi, T, Hokamura, T, Yamada, F, Kumamoto Univ, Japan

24. DEEP-OCEAN VEHICLES & NAVIGATION III (V. 2))

Tuesday June 21 10:45 311A

Chair : Nakamura, M, Kyushu Univ., Japan
Co-Chair: Grosenbaugh, M, Woods Hole Oceanographic Inst, USA

Development of Underwater Modular Robot System for Automatic Underwater Manipulation Task by Autonomous Underwater Vehicles
Yu, S C, Kim, T W, Rosa, K, Yi, K Y, Choi, S K, Univ of Hawaii, USA; Ura, T, Univ of Tokyo, Japan; Yuh, J K, Univ of Hawaii, USA

Fast On-line Neuro-fuzzy Controller for Underwater Robots
Kim, T W, Yuh, J K, Univ, of Hawaii, USA

Development of Ultrasound Communication System in Basin Experiment for PADOMS
Watanabe, K, Sugiyama, K, Nakamura, A, Tokai Univ; Suzuki, H, Univ of Tokyo, Japan

A Client-server Oriented Programming Language for Autonomous Underwater Manipulation
Marani, G, Medrano, I, Choi, S K, Yuh, J K, Univ of Hawaii, Korea

Tuning and Modeling of Redundant Thrusters for Underwater Robots
Hanai, A M, Rosa, K H, Choi, S K, Univ of Hawaii, USA

Generalized Mission Description Language for Autonomous Underwater Robots
Choi, H T, Lee, P M, Korea Res Inst of Ships and Ocean, KORDI, Korea

A Case for Active Control of Underwater Vehicles Towed by Very Long Marine Cables
Grosenbaugh, M, Woods Hole Oceanographic Institution, USA

25. ADVANCES IN TUBULAR STRUCTURES (V. 4)

Tuesday June 21 10:45 320A

Chair: Wardenier, J, Delft Univ of Technology, The Netherlands
Co-chair: Makino, Y, Kumamoto Univ, Japan

New API Fatigue Provisions
Marshall, P W, MPH Systems Engineering, USA

Tubular vs. Non-Tubular Hot Spot Stress Methods.
Marshall, P W, MPH Systems Engineering, USA; Wardenier, J, Delft Univ of Tech, The Netherlands

Status IIW Static Design Recommendations
Zhao, X-L, Monash Univ, Australia

A Proposal for an Ultimate Strength Formulation of CHS KTKT Joints.
Makino, Y, Van der Vegte, G J, Kumamoto Univ; Kurobane,Y, Sojo Univ, Japan

Recent Research on Tubular Joints with very Thick Walled Chords.
Choo, Y S, Qian, X D, National Univ of Singapore, Singapore

Ultimate Strength Formulation for Axially Loaded CHS Uniplanar T-Joints.
Van der Vegte, G J, Kumamoto Univ, Japan/TU-Delft, The Netherlands; Makino, Y, Kumamoto Univ, Japan

26. COMPOSITES & SMART STRUCTURES III (V. 4)

Tuesday Junr 21 10:45 321C

Chair: Wheat, H G, Univ of Texas at Austin, USA
Co-Chair: Hoogenboom, P C J, Delft Univ of Tech, The Netherlands

New Evaluation of Progressive Delamination with and without Crack Profile in the Case of Circular Notch
Kim, C W, Korea Univ; Oh, D J, Andong National Univ, Korea

Dynamic Analysis of Anisotropic Circular Plates Considering the Effect Deformation – Analysis of Natural Frequencies and Modes

Goto, H, High Energy Accelerator Research Organization; Gotoh, M, Kanazawa Univ; Hirashima, K, Yamanashi Univ; Hirose, Y, Kanazawa Univ, Japan

Low-velocity Impact Response of Carbon/Epoxy Laminates Subjected to Temperature and Moisture Conditioning
Hosur, M V, Jain, K, Jeelani, S, Tuskegee Univ, USA

Shock Attenuation in Graded Materials
Dutta, P K, ERDC-CRREL; Dipaolo, B, ERDC-Geotechnical & Structures Lab, USA

Micromechanics of Damage in Matrix-inclusion Composites
Al-Ostaz, A, Univ of Mississippi, USA

Optimisation of FRP Top-hat Stiffened Single Skin and Monocoque Sandwich Plates Using Genetic Algorithm
Maneepan, K, Jeong, H K, Shenoi, R A, Univ of Southampton, UK

Examination on Experimental Determination of Stress Intensity Factor for Wood by Caustics Method
Mori, T, Kanazawa Univ; Shozu, M, Maizuru National College of Tech, Japan ; Lin, Z, Dalian Inst of Light Industry, China ; Hirose, H, Kinjo Univ, Japan

Elastic Properties of Composite Material with Anisotropic Ellipsoidal Inhomogeneities
Yagi, K, Kanazawa Univ, Japan; Lin, Z, Dalian Inst of Light Industry, China ; Shozu, M, Maizuru National College of Tech ; Hirose, H, Kinjo Univ, Japan

27. OCEAN ENERGY III: Turbines (V. 1)

Tuesday June 21 10:45 304A

Chair: Setoguchi, T, Saga Univ, Japan

Design of Impulse Turbine with an End Plate for Wave Energy Conversion
Hyun, B S, Moon, J S, Korea Maritime Univ; Hong, S W, Korea Res Inst of Ships and Ocean, KORDI, Korea

On the Design of Impulse Turbines for Wave Energy Plant
Muthukumar, S, Jayashankar, V, Santhakumar, S, IID Madras, India; Setoguchi, T, Saga Univ, Japan

Effect of Tip Clearance on the Performance of Impulse Turbine for Wave Energy Conversion
Kim, T W, Doowon Industrial College, Korea; Takao, M, Matsue National College of Tech; Setoguchi, T, Kaneko, K, Saga Univ, Japan

Performance of Radial Turbine with Pitch-controlled Guide Vanes
Takao, M, Fujioka, Y, Matsue National College of Tech, Japan; Kim, T W, Doowon Industrial College, Korea; Setoguchi, T, Saga Univ, Japan

Hysteretic Characteristics of Biplane Wells Turbine in a Deep Stall Condition
Mamun, M, Kinoue, Y, Setoguchi, T, Kaneko, K, Saga Univ, Japan; Lee, Y W, Pukyong National Univ, Korea

28. SHIP STRUCTURAL MECHANICS (V. 4)

Tuesday June 21 10:45 304B

Chair: Rashed, S, MSC, Japan
Co-Chair: Rigo, P, Univ of Liege, Belgium

Least Construction Cost of FSO Offshore Structures and LNG Gas Carriers
Rigo, P, Jérôme, M, Caparace, J-D, Univ of Liege, Belgium

Optimum Parameterization in Grillage Design under a Worst Point Load Using Real-coded Micro-genetic Algorithm
Kim, Y Y, Gotoh, K, Kyushu Univ, Japan; Kim, K S, Inha Univ, Korea; Toyosada, M, Kyushu Univ, Japan

Probabilistic Assessment of Ultimate Hull Girder Strength in Longitudinal Bending
Kawabe, H, Osaka Univ; Ohtani, H, Tokai Univ; Maeno, Y, Fujii, Y, Iijima, K, Sanoyas Hishino Meisho Co; Yao, T, Osaka Univ, Japan

Estimation of Buckling and Ultimate Strength of a Stiffened Web Plating with Cutout
Harada, M, Nippon Kaiji Kyokai; Fujikubo, M, Hiroshima Univ, Japan

ANN-based Response Surface Method and Its Application to Ultimate Strength of Plates
Pu, Y C, Mesbahi, E, ElHewy, A H, Univ of Newcastle upon Tyne, UK

Compressive Tests on Panels with Different Configurations
Gordo, J M, Soares, C G, Institut Superior Tecnico, Portugal

Application of Idealized Structural Unit Method to Progressive Collapse Analysis of Ship Hull Girder under Longitudinal Bending
Fujikubo, M, Pei, Z Y, Hiroshima Univ, Japan

Design Wave-induced Bending Moment Assessment for Any Given Ship's Service Life
Kamenov-Toshkov, L, Marine Advanced Technologies, Bulgaria; Ivanov, L, American Bureau of Shipping, USA; Garbatov, Y, Instituto Superior Tecnico, Portugal

TUESDAY 13:30

Plenary Presentation III (V.2)

Tuesday	June 21	13:30	**310BC**

Siberia–Far East Pipeline Project
Speaker, Russia to be announced on www.isope.org

29. NEW PORT DEVELOPMENTS IN KOREA (V.3)

Tuesday June 21 14:30 310BC

Chair: Chun, I S, Konkuk Univ, Korea
Co-Chair: Lee, J W, Sekwang Engineering Consultants, Korea
Co-Chair: Lee, T H, Kukdong Engineering & Construction, Korea

Introduction of Busan New Port Project – Hub Port in Northeast Asia
Yang, S Y, Byun, K J, Kang, M S, Samsung Corp, Korea

Design and Construction of Ground Improvement on Thick Deltaic Marine Clay in the Pusan New Port Project Site
Byun, G J, Jung, J B, Kim, C D, Yang, S Y, Samsung Engineering & Construction, Korea

The Recent Experiences on Kwangyang 3-2 Container Terminal Project
Ko, K W, Park, K Y, Hyundai Engineering and Construction, Korea

Construction for West Breakwater of Cheju Outer Harbor
Kim, M S, Yeom, H J, Lee, Y C, Daelim Industrial, Korea

Status and Visions of Automated Container Terminals

Jeon, Y H, park, Y M, Korea Container Terminal Authority, Korea

Efficient Measures of Port Developments by Remodeling Techniques
Song, M S, Korea Container Terminal Authority; Chun, I S, Konkuk Univ, Korea

Dae-po Port Being Developed as a Multi-functional Port
Kim, T H, Ssanyong Construction; Han, W S, Donhae Regional Maritime Affairs & Fisheries Office; Joo, J W, Hyein E&C, Korea

Water Chamber Embedded Rubble Mound Seawater Exchange Breakwater with a Overtopping Seawall
Lee, D S, Kim, C I, Sung, H S, KORDI, Korea

30. HYDRO V: CFD 1 (V. 3)

Tuesday June 21 14:30 311BC

Chair: Ferrant, P, Ecole Centrale de Nantes, France
Co-Chair: Yang, C, George Mason Univ, USA

Simulation of the Flow around Complex Hull Geometries by an Overlapping Grids Approach
Muscari, R, Di Mascio, A, INSEAN, Italy

Numerical Simulation of the Vortical Flow around an Oscillating Circular Cylinder
Kim, K S, Lee, S J, Suh, J C, Seoul National Univ, Korea

Evaluation of Vertical Plane Dynamic Stability by CFD
Lee, S W, Jin, E S, Lee, H, Daewoo Shipbuilding & Marine Engineering, Korea

CFD Simulation of a Drifting Ship in Shallow Water
Huang, E T, Naval Facilities Engineering Service Center; Chen, H C, Texas A&M Univ, USA

Development of a High Performance Cavitation-free Rudder System
Rhee, S H, Fluent Inc, USA; Kim, H C, Seoul National Univ, Korea

Numerical Analysis of Viscous Flows around a Marine Propeller Using a 2nd Order Finite Volume Method for Solutions of the Incompressible RANS Equations
Kim, J J, Samsung Heavy Industries; Paik, K J, Chungnam National Univ, Korea

Mathematical Properties of the Stratified Fluid in a Homogeneous Gravity Field
Giniatoulline, A, Universidad de los Andes, Colombia

31. GEOTECH IV: Soil Properties 2 (V. 3)

Tuesday June 21 14:30 320BC

Chair : Sumer, B M, Technical Univ of Denmark, Denmark

Finite Element Modeling of a Sand Medium in Direct Shear Testing with ANSYS
Uygar, E, Dvven, A G, Eastern Mediterranean Univ, Turkey

Long Term Test of Geotechnical Properties for Natural Fiber Drains
Jang, Y S, Jang, J Y, Dongguk Univ; Kim, S S, Hanyang Univ, Korea

Modified Solution of Expansion of Cylindrical Cavity Based on SMP Criterion
Luan, M, Li, B, Dalian Univ of Tech, China

Temperature and Time Effects on the Secondary Compression of a Highly Plastic Clay – Bentonite
Shimizu, M, Tottori Univ; Katsuhara, H, Yamako Construction, Japan

Study on Failure Mechanism and Bearing Capacity Behavior of Layered Subsoils under Inclined Loading
Yuan, F F, Inst of Rock and Soil Mechanics, CAS; Luan, M, Dalian Univ of Tech; Yang, S W, Tianjin Univ; Liu, J L, Inst of Rock and Soil Mechanics, CAS, China

Stress-strain Characteristics of Lightweight Foam Soil
Yoon, G L, KORDI, Korea

Soil Investigation for House Construction on Soft Ground in Japan
Tamura, M, Building Research Inst; Mizutani, Y, Kanematsu-Nkk; Kawamura, M, Sato, H, Nihon Univ; Futami, T, Urban Renaissance Agency, Japan

A Case Study of Reclamation and Soil Improvement Involving Ultra Soft Slurry-like Soil
Na, Y M, Hyundai Engineering & Construction, Korea

32. COASTAL II: Breakwater 1 (V. 3)

Tuesday June 21 14:30 310A

Chair: Chwang, A T, Univ of Hong Kong, China
Co-Chair: Cho, W C, Chung-Ang Univ, Korea

VOF-FEM-DEM Numerical Model of Submerged Breakwater Collapse
Bierawski, L G, Gdansk Univ of Tech, Poland; Maeno, S, Okayama Univ, Japan

Wave Forces on a Gravity-type Curtain-walled Breakwater and the Stability Against Waves
Nakamura, T, Ehime Univ, Japan

The Dynamic Pressure on an Inclined Wall under the Action of Grouped Waves
Gentile, R, Lando, L R, Scarsi, G, Univ of Genova, Italy

The Stability and Wave Transmit Analysis of Submerged Geotextile Tube Breakwater by Hydraulic Model Test
Shin, E C, Univ of Incheon; Oh, Y I, Korea Agricultural Rural Infrastructure Corp, Korea

A Study of Wave-induced Dynamic Stresses of Foundation Soil beneath Vertical Breakwater
Chang, S C, Chien, L K, Lin, J G, National Taiwan Ocean Univ; Chiu, Y F, Harbor and Marine Tech Center, Taiwan, China

Application of the Performance-based Seismic Design Method for Wharf Structures
Jang, J J, Chang, C Y, National Taiwan Ocean Univ, Taiwan, China

Probabilistic Seismic Risk Analysis of Breakwater
Kim, S H, Daewoo Engineering & Construction; Yi, J H, KAIST; Kim, D K, Kunsan National Univ, Korea

33. BIOMECHANICS & CONTROL (V. 4)

Tuesday June 21 14:30 311A

Chair: Kato, N, Osaka Univ, Japan
Co-Chair: Yamaguchi, S, Kyushu Univ, Japan

Development of a Mechanical Fish That is Capable of Forward, Up-and-down, and Turning Motions
Kobayashi, R, MEITEC Corp; Fukasawa, T, Kanazawa Inst of Tech, Japan

Tracking Control for a Biomimetic Autonomous Underwater Vehicle Using Pectoral and Caudal Fins
Guo, J, Wu, C H, Chiu, F C, Cheng, S W, National Taiwan Univ, Taiwan, China

Numerical Study on Unsteady Flow around a Mechanical Pectoral Fin
Suzuki, H, Kato, N, Osaka Univ, Japan

Robotfish-based Underwater Mobile Sensor Networks for Environment Monitoring
Shen, Z Z, Wang, S, Tan, M, Wang, L, Inst of Automation, CAS, China

Motion Control of a Robot Fish with Posture Sensors Based on CPGs
Wang, L, Wang, S, Tan, M, Inst of Automation, CAS, China

Biology-inspired Precision Maneuvering of Underwater Vehicles (Part 4)
Ando, Y, Shigetomi, T, Kato, N, Osaka Univ, Japan

Analysis and Modeling of Fish Swimming Locomotion Mechanism Based on Image Sequences
Guo, C Z, Wang, Z F, Univ of Science and Tech, China

A Study on Accelerated Motion and Circling Movement of a Fish Based on Image Analysis
Yamaguchi, S, Terada, M, Kyushu Univ, Japan

34. HPM I: Friction Stir Welding of Steel (V. 4)

Tuesday June 21 14:30 320A

Chair: Threadgill, P, TWI, UK
Co-chair: Kokawa, H, Tohoku Univ , Japan

Introduction
Ayer, R, ExxonMobil Research & Engineering; USA

Friction Stir Welding of Steel T-Joint Configurations
Steel, R J, MegaStir Technologies; Nelson, T W, Sorensen, C D, Brigham Young Univ; Packer, S M, Advanced Metal Products, USA

Microstructure and Mechanical Properties of Friction Stir Welded 430 Stainless Steel
Park, S H, Sato, Y S, Kokawa, H, Tohoku Univ; Okamoto, K, Hirano, S, Inagaki, M, Hitachi Ltd, Japan

Effect of FSW Tool Material on Debris Field in Hard Metals
Li, T, Trapp, T, EWI; Helder, E, GEAE SSE Joining Development; Subramanian, P R, General Electric, USA

Properties and Microstructure of Friction Stir Welded Inconel Alloy 600
Sato, Y S, Arkom, P, Park, S H C, Kokawa, H, Tohoku Univ; Japan; Nelson, T W, Brigham Young Univ; Steel, R J, MegaStir Technologies, USA

A Preliminary Study on the Properties of Friction Stir Welded Joints in a S355 Steel
Müller, S, GKSS Forschungszentrum GmbH, Germany; Johnson, R, TWI, UK; dos Santos, J F, GKSS Forschungszentrum GmbH, Germany; Threadgill, P, TWI, UK

Development of FSW Process for Steel Assemble to Shipbuilding and Offshore Structure
Shinoda, T, Takegami, H, Nagoya Univ; Hirakawa, M, Yamamoto, H, Hitachi Construction Machinery, Japan

Mechanical Properties of Friction Stir Welds of Ultrafine Grained Steel and other Materials
Fujii, H, Cui, L, Tsuji, N, Nakata, K, Nogi, K, Osaka Univ, Japan

Interface Microstructure in Dissimilar Friction Welded Joint
Ayer, R, Jin, H, Mueller, R, Ling, S, ExxonMobil Research & Engineering; Ford, S, ExxonMobil Upstream Research, USA

Tool Geometries and Process Parameters Required to Friction Stir Weld High Melting Temperature Materials
Packer, S M, Advanced Metal Products; Steel, R J, MegaStir Technologies; Nelson, T W, Sorensen, C, Brigham Young Univ; Mahoney, M, USA

35. OFFSHORE PIPELINES, RISERS, MOORING I (V. 2)

Tuesday June 21 14:30 321C

Chair : Moshagen, H, Statoil, Norway

Commissioning 8000 km of Subsea Pipelines
Falck, C, Vingerhagen, A, Maribu, J, Statoil, Norway

Ormen Lange Pipelines – A Step Further
Wilhelmsen, A, Norsk Hydro, Norway

Ormen Lange Pipelines: Routing and Cost-effective Seabed Preparation
Holden, O M, Paulsen, G, Reinertsen Engineering; Eklund, T, Hydro, Norway

Hydrate Prevention on Long Pipelines by Direct Electrical Heating
Kulbotten, H, Lervik, J K, SINTEF Energy Research; Nysveen, A, Hoyer-Hansen, M, NTNU, Norway

The Influence of the Reeling Installation Method on the Integrity of Circumferential Welds in Tight Fit Pipe
Focke, E S, van Oosten, J, Heerema Marine Contractors/TU-Delft; Romeijn, A, Meek, J, TU-Delft, The Netherlands

Pipeline Expansion on Uneven Seabed
Soreide, T, Paulsen, G, Kvarme, S O, Reinertsen Engineering, Norway

HV Cable Design Applicable for Direct Electrical Heating of Very Long Flowlines
Hvidsten, S, Lervik, J K, Benjaminsen, J T, SINTEF Energy Research; Olafsen, K, Lundegaard, L M, Nexans Norway; Børnes, A, Statoil, Norway

Investigation of Multiphase Twin Screw Pumps Provides a Basis for New Offshore Applications
Rausch, T, Vauth, T, Univ of Hannover; Reichwage, M, Joh. Heinr. Bornemann GmbH; Mewes, D, Univ of Hannover, Germany

36. OCEAN ENERGY IV: Waves & OTEC (V. 1)

Tuesday June 21 14:30 304A

Chair: Sarmento, A J N A, Lisbon Technical Univ., Portugal
Co-Chair: Hong, D C, Chungnam National Univ, Korea

Characteristics of Floating Type Wave Power Generating System with Oscillating Water Column
Suzuki, M, Univ of Tokyo; Washio, Y, JAMSTEC; Kuboki, T, The Pacific Society, Japan

Numerical Study on the Wave Power Absorbed by Floating BBDB Wave Energy Absorbers
Hong, D C, Chungnam National Univ; Hong, S W, Hong, S Y, Korea Res Inst of Ships and Ocean, KORDI, Korea

Comparison of Numerical Dynamic Pressure Inside a Pneumatic Chamber of an OWC Device with Measured Dynamic Pressure by Model Experiments

Hong, S W, Korea Res Inst of Ships and Ocean, KORDI; Hong, D C, Chungnam Naitonal Univ; Hong, S Y, Kim, J H, Choi, H S, Korea Res Inst of Ships and Ocean, KORDI; Lew, J M, Chungnam National Univ, Korea

Technical Manual for Oscillating Water Column Type Wave Power Device
Osawa, H, Miyazaki, T, JAMSTEC, Japan

Time Domain Simulations on a Single Point Moored Submerged Sphere of Variable Radius
Cruz, J M B P, Sarmento, A J N A, Instituto Superior Tecnico, Portugal

Oceanic Observation and Investigation for Ocean Energy Utilization in Fiji
Ikegami, Y, Urata, K, Bando, A, Saga Univ; Nakaoka, T, Tabuchi, K, Kamano, T, National Fisheries Univ, Japan; Pickering, T, Univ of the South Pacific, Fiji

Effect of Optimum Mass Fraction on OTEC System Using Ammonia-water as Working Fluid
Ikegami, Y, Yasunaga, T, Uehara, H, Saga Univ, Japan

37. LNG & TERMINAL (V. 1)

Tuesday June 21 14:30 304B

Chair: Yang, Y T, Hyundai Heavy Industries, Korea
Co-Chair: Radwan, A M, Saudi Aramco, Saudi Arabia

Expansion of Pyeongtaek LNG Receiving Terminal of Korea Gas Corporation
Sohn, Y S, Yang, Y M, Yoon, I S, Choi, S H, Choi, G H, Korea Gas Corp, Korea

Responses of a LNG Offloading Terminal to Hurricane in Shallow Water
Liu, Y, Boatman, T L, FMC SOFEC, USA

An Initial Study for the Development of a Smart Health Monitoring System for Insulation Panels of LNG Carriers
Kim, M H, Kang, S W, Lee, J M, Kim, D H, Keum, C Y, Pusan National Univ, Korea

Numerical Simulation on Ship to Ship Transfer Operation in Rough Sea
Inoue, Y, Kamruzzaman, M, Yokohama National Univ; Sakakibara, S, The Yokohama Rubber Co, Japan

Stern Design of a 200,000 m^3 LNG Carrier
Isaacs, K A, Lee, K J, Chosun Univ, Korea

38. DEEP-OCEAN VEHICLES & NAVIGATION IV (V. 2)

Tuesday June 21 14:30 307AB

Chair : Choi, S K, Univ of Hawaii, USA

A Numerical Analysis on the Nonlinear Dynamic Behaviour of the First Cable of Deepsea Unmanned Underwater Vehicle
Park, H I, Kwon, D Y, Korea Maritime Univ; Jung, D H, Korea Research Inst of Ships & Ocean Engineering/KORDI, Korea

Experimental Observation on the Behavior of a Self-stable Controllable Underwater Towed Vehicle by Photogrammetry
Wu, J M, Ye, J W, South China Univ of Tech, China

Computational Fluid Dynamics Analysis of an Underwater Towed System
Wu, J M, Li, Z Y, Ye, J W, South China Univ of Tech, China

Robust Underwater Acoustic Communication Algorithm to a Moving Vehicle Based on Adaptive Time-reversal Processing
Kim, J S, Shin, K C, Korea Maritime Univ, Korea

Loop Parameter Computing Algorithm for Carrier Phase Tracking in the Underwater QPSK Transmission
Kim, S G, Choi, Y C, Park, J W, Kim, S M, Lim, Y K, Korea Res Inst of Ships and Ocean, KORDI, Korea

A Broadband FIR Beamformer for Underwater Acoustic Communications
Choi, Y C, Lim, Y K, Korea Res Inst of Ships and Ocean, KORDI, Korea

An USBL Position Monitoring System in a Shallow Water Tank
Kim, S M, Lee, P M, Lee, C M, Jeon, B H, Korea Res Inst of Ships and Ocean, KORDI, Korea

WEDNESDAY 08:00

39. SAKHALIN II & ULTRA DEEPWATER (V. 1)

Wednesday June 22 08:00 310BC

Chair: Bekker, A T, Far Eastern State Tech. Univ., Russia
Co-Chair: Capanoglu, C C, I.D.E.A.S., Inc, USA

Dynamic Analysis of Positioning and Installation of Lun-A Platform for Sakhalin-II Project
Zhukov, G V, Karlinsky, S L, Makarov, M V, SOE "CDB ME "Rubin", Russia

T-shape Barge Design for Transportation and Mating of Sakhalin II Platforms
Kim, B W, Ha, M K, Park, C H, Kim, S H, Kim, Y B, Samsung Heavy Industries, Korea

TRICERATOPS: An Effective Platform for Developing Oil and Gas Fields in Ultra Deep Water
White, C N, EnerSea Transport; Copple, R W, Capanoglu, C C, I.D.E.A.S., Inc, USA

Practical Design of Floating Structures for Deepwater Offshore Development Field
Lee, J Y, Ha, M K, Samsung Heavy Industries, Korea; Clauss, G F, Technical Univ of Berlin, Germany

Stability against Capsizing of a Concrete Platform
Huang, E T, Naval Facilities Engineering Service Center, USA

40. HYDRO VI: CFD 2 (V. 3)

Wednesday June 22 08:00 311BC

Chair: Kim, W J, Mokpo National Univ, Korea
Co-Chair: Chen, H C, Texas A&M Univ, USA

CFD Simulations of Oscillating Flow around Solid and Perforated Plates
Liu, X, Shanghai Jiao Tong Univ, China; Huang, S, Univ of Glasgow and Strathclyde, UK

Computation of Unsteady Loading on a Circular Cylinder for High Reynolds Number Flows
Kim, S E, Fluent Inc, USA; Mohan, L S, Fluent India, India

Numerical Simulation of Turbulent Free Surface Flow around a Self-propelled Ship
Kim, J, Park, I R, Van, S H, Korea Research Inst of Ships & Ocean Engineering/KORDI, Korea

Computation of 3D Flows with Violent Free Surface
Yang, C, Lohner, R, George Mason Univ, USA

Internal Flow Analysis of FPU Oil Separator Considering Six Degrees-of-Freedom Ship Movement
Park, T H, Lee, Y W, Cho, J W, Shin, H S, Hyundai Heavy Industries, Korea

Effects of Density Stratification on Turbulence Structures and Turbulent Heat Transfer Mechanism in Turbulent Open-channel Flows
Nagoasa, R, National Inst of AIST, Japan

41. GEOTECH V: Piles &Caissons 1 (V. 2)

Wednesday June 22 08:00 320BC

Chair : Kim, D S, Korea Advanced Inst of Science and Tech, Korea
Co-Chair: Kumar, S, Souther Illinois Univ, USA

Study of Seepage Flow and Sand Plug Loosening in Installation of Suction Caissons in Sand
Tran, M N, Randolph, M F, Univ of Western Australia; Airey, D W, Univ of Sydney, Australia

The Evaluation Method and a Quality Control of a Floating SCP in Soft Clay
Fukuda, M, Suwa, S, Geo-Research Inst, Japan

A Proposal as to Execution Management Index in Bored Precast Pile Method
Kani, Y, Shimizu, M, Nippon Concrete; Nabeshima, Y, Osaka Univ; Hayakawa, K, Nippon Concrete, Japan

Effect of Rock Mass Weathering on Resistant Behavior of Rock Socketed Pile
Kwon, O S, Kim, K T, Daelim Industrial; Cho, S M, Korea Highway Corp; Kim, M M, Seoul National Univ, Korea

The Axial Load Transfer Behavior of Large Diameter Composite Piles Socketed into the Weathered and the Fresh Rock for Coastal Bridge
Choi, Y K, Lee, M H, Kyungsung Univ, Korea; Nam, M S, Univ of Houston, USA

Uplift Mechanism of Underground Structures in Dry Sand Subjected to Cyclic Simple Shear by DEM
Kawabata, T, Ooishi, Uchida, K, Kobe Univ; Nakase, H, Tokyo Electric Power Services, Japan

Load Bearing Behaviour for Pile with Multiple Stepped Two Diameters Embedded in Weathered Granite Soil
Uchida, K, Kawabata, T, Imai, M, Syoda, D, Kobe Univ, Japan

42. COASTAL III: Breakwater 2 (V. 3)

Wednesday June 22 08:00 310A

Chair Mizutani, N, Nagoya Univ, Japan
Co-Chair: Angelides, D C, Aristotle Univ of Thessaloniki, Greece

Effect of Berm Width on Step Style Dike to Wave Runup
Juang, J T, Chienkuo Tech Univ; Lin, C F, Fon-Chia Univ; Huang, Y Y, Taiwan, China

Development of a Wave-warning System for Waterfront Amenity Structures Covered with Wave-dissipating Blocks
Honma, D, Yamamoto, Y, Imoto, T, Civil Engineering Research Inst of Hokkaido; Yatsuyanagi, A, Hokkaido Regional Development Bureau, Japan

Wave Trapping by Porous and Flexible Barriers in a Two-layer Fluid
Sahoo, T, Kumar, P S, Indian Inst of Tech Khragpur, India

Analysis of Flow and Turbulence Structure for a Rectangular Floating Breakwater
Yoon, J S, Lee, M K, Inje Univ, Korea; Jung, K H, Texas A&M Univ, USA

A Basic Study on the Development of the Forms of Floating Bridges
Park, R S, Univ of Ulsan; Song, C H, Univ of Jeju; Kim, S G, Univ of Ulsan, Korea

Submerged Horizontal and Vertical Membrane Wave Barrier
Kee, S T, Seoul National Univ of Tech, Korea

Submerged Porous Plate Wave Absorber
Kee, S T, Park, W T, Lee, S H, Park, J K, Seoul National Univ of Tech, Korea

Method for the Ship Channel Design Using a Variable Bumper Area Model
Lee, J W, Korea Maritime Univ; Jeong, D D, Mopko Maritime Univ, Korea

43. SHIP PROPULSION (V. 4)

Wednesday June 22 08:00 311A

Chair: Minami, Y, National Maritime Res Inst, Japan
Co-Chair: Hyun, B S, Korea Maritime Univ, Korea

Superconducting MHD Helical Channel Experimental Ship "HEMS-1"
Peng, Y, Sha, C W, Yang, A H, Peng, A W, Inst of Electrical Engineering, CAS, China

An Investigation of the Velocity Distributions within a Ship's Propeller Wash
Hamill, G A, Kee, C, Lan, W H, Queen's Univ of Belfast, UK

On the R & D of the Super Eco-ship Project
Minami, Y, Kawanami, Y, National Maritime Research Inst, Japan

Identification of Propeller Singing Phenomenon through Vibration Analysis of Propeller Blade
Park, H S, Choi, S H, Kim, N S, Daewoo Shipbuilding & Marine Engineering, Korea

The Influence of Propeller/hull Interaction on Propeller Induced Cavitating Pressure
Lee, S K, American Bureau of Shipping; Chen, H C, Texas A&M Univ, USA

44. HPM II: Friction Stir Welding of Aluminum (V. 4)

Wednesday June 22 08:00 320A

Chair: Komizo, Y, Osaka Univ, Japan
Co-Chair: Packer, S M, Advanced Metal Products, USA

Welding Properties between 6063 Aluminum and S45C Steel by Friction Stir
Yasui, T, Shimoda, Y, Tsubaki, M, Fujimoto, M, Toyohashi Univ of Tech, Japan

Measurement of Quantity of Heat in Friction Welding
Isshiki, Y, Setsunan Univ; Yamaguchi, H, Osaka Prefecture Univ; Kawai, G, Sawai, T, Osaka Sangyo Univ; Ogawa, K, Osaka Electric-Communication Univ, Japan

Friction Stir Welding of 7055 Al Alloy
Jung, S B, Sungkyunkwan Univ; Yeon, Y M, Suwon Science College; Lee, W B, Lee, C Y, Kim, S K, Sungkyunkwan Univ, Korea

Reliability of Microstructure in FSW Joints of Aluminum Alloys at Elevated Temperature
Shibayanagi, T, Maeda, M, Osaka Univ, Japan

Friction Welding of Aluminum Alloy Applied Poisoning Control Process
Shinoda, T, Ishikawa, K, Takegami, H, Nagoya Univ, Japan

45. OFFSHORE PIPELINES, RISERS, MOORING II (V. 2))

Wednesday June 22 08:00 321C

Chair : Gresnigt, A M, TU-Delft, The Netherlands
Co-Chair: Tsuru, E, Nippon Steel, Japan

Special Features of the Frost Heaving of the Buried Chilled Gas Pipeline
Magomedgadzhiyeva, M, Grechishev, S, Dmitriyeva, S, OPIRS, Russia

Problems of Probabilistic Simulation of an Undersea Pipeline Track under Impact of Drifting Hummocks Offshore Sakhalin Island
Bekker, A T, Sabodash, O A, Semigukova, S O, Far-Eastern State Technical Univ, Russia

Elasto-plastic Bearing Behaviour of Steel Pipelines under Internal Pressure and Bending Moment
Schaumann, P, Keindorf, C, Univ of Hannover; Brüggemann, H, Veenker Ingenieur GmbH, Germany

Experimental Research on Local Buckling Behaviour of Tight Fit Pipe
Focke, E S, Heerema Marine Contractors/TU-Delft; Gresnigt, A M, Meek, J, TU-Delft, The Netherlands

Displacement Control in Lateral Buckling of Short Pipelines
Christensen, L, INTEC Engineering, Australia

Analytical Linear Elastic Analysis of Lateral Buckling of "Short" Pipelines
Christensen, L, INTEC Engineering, Australia

Study on Mechanical Property of Corroded Submarine Pipeline
Fan, Y F, Zhou, J, Dalian Univ of Tech, China

46. GEOTECH VI: Special Projects (V. 2)

Wednesday June 22 08:00 304A

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

Beach Structure Instability & Erosion Risk and Hazardous Degree Evaluating in the Caspian Sea Southern Coasts with Using GIS Environment
Khoshravan, H, Water Research Inst, Iran

Ground Micro-tremor Measurements in Southwestern Shiga Area
Nabeshima, Y, Hayakawa, K, Osaka Univ, Japan

Analysis of Crack Propagation Path on the Anisotropic Bi-material Rock
Tu, C H, Chen, C S, National Cheng Kung Univ, Taiwan, China

The Coupled Effects of Electrokinetic Sedimentation and Remediation of Contaminated Dredged Sediments
Chung, H I, Korea Inst of Construction Tech, Korea

Automated Monitoring and Analysis of Micro-vibration in the Hi-Tech Industrial Park
Kuo, C W, Chen, Y L, Chen, Y S, Tai, C W, Southern Taiwan Science Park Administration; Ni, S H, Ko, C C, National Cheng Kung Univ, Taiwan, China

Evaluating the Affected Area of the Unstable Chiu-Fen-Erh Landslide Using Discontinuous Deformation Analysis
Wu, J H, Wang, W N, Ouyang, S, Industrial Tech Research Inst, Taiwan, China

Establishment of a 3-D Digital Model for Underground Geological Stratum by Applying AutoCAD/AutoLISP
Chen, S, Chuang, Y C, Chao, C P, Jeng, C J, Huafan Univ, Taiwan, China

Availability of Neural Network System to Geotechnical Information Database in Osaka Bay
Oda, K, Tokida, K, Okada, M, Osaka Univ, Japan

47. SHIP CAD & FAST SHIPS, (V. 4)

Wednesday June 22 08:00 304B

Chair: Yao, T, Osaka Univ, Japan
Co-Chair: Fujikubo, M, Hiroshima Univ, Japan

Modeling and Simulation (M&S) Technologies for Naval Ship Design Process and Its Applications
Lee, C M, Gong, D S, Yun, J M, Korea Res Inst of Ships and Ocean, KORDI, Korea

Spatial Block Arrangement Scheduling in Shipbuilding Industry Using Genetic Algorithm for Obtaining Solution for Bottleneck Anticipation
Varghese, R, Yoon, D Y, Chung, K K, Chosun Univ, Korea

Numerical Simulation of Waves behind a Transom Stern with the Effect of Bottom Profiles
Kim, K S, Jeong, L L, Inha Univ; Kang, D S, Lee, Y G, Korean Society of Ship Inspection & Tech, Korea

Ship Hull Representation with Single NURBS Surface
Lu, C H, Lin, Y, Ji, Z S, Dalian Univ of Tech, China

Strength Analysis of the "JINGDUN" Wave Piercing Hydrofoil
Li, Z B, W, H Q, Hu, B, Dalian Maritime Univ, China

Powering and Seakeeping Performance Optimization of a Mission Configurable High-speed Trimaran Concept
He, H P, Univ of Michigan, USA; Park, J W, Mokpo National Univ, Korea; Savander, B, Troesch, A W, Univ of Michigan, USA

SWATH Form Optimized Design with High Speed and Seakeeping Performance
Li, T, Lin, Y, Ji, Z S, Dalian Univ of Tech, China

WEDNESDAY 10:45

48. FPSO & LNG (V. 1)

Wednesday June 22 10:45 310BC

Chair: Inoue, Y, Yokohama National Univ., Japan

Co-Chair: Shin, H S, Hyundai Heavy Industries Co., Korea

Coupled Analysis of Deepwater Oil Offloading Buoy
Ryu, S S, Duggal, A S, Heyl, C N, Liu, Y H, FMC SOFEC Floating Systems, USA

Application of Component Based Spectral Fatigue Analysis System
Han, S K, Park, K W, Heo, J H, Daewoo Shipbuilding & Marine Engineering, Korea

Investigation of FPSO Control Method Based on the Strength Analysis
Han, X S, Ma, J, Xing, D L, Dalian Univ of Tech, China

Modeling of the Unsteady Separated Flow over Bilge Keels of FPSO Hulls under Heave and Roll Motions
Kinnas, S A, Yu, Y H, Vinayan, V, Kacham, B, Univ of Texas at Austin, USA

Thruster-current Interaction Effects for Azimuthing Thrusters
Cozijn, H, MARIN, The Netherlands

Effects of Sway Motion on Roll Reduction Performance of Anti-rolling Tanks for FPSOs
Ikeda, Y, Harada, M, Osaka Prefecture Univ, Japan

A Design Concept Review of F(P)SOs in West Africa
Chung, H W, Yoon, M C, Park, I K, Hyundai Heavy Industries, Korea

Advanced Evacuation Simulation of Emergency Preparedness for FPSO Conversion
Kim, H, Univ of Strathclyde and Glasgow, UK; Zhou, Y, Ngee Ann Polytechnic, Singapore; Vassalos, D, Univ of Strathclyde and Glasgow, UK

A Numerical and Experimental Study on Motion and Wave Induced Load Responses of Very Large FPSO in Restricted Water Depth
Xie, H E, Li, R P, Shanghai Jiao Tong Univ; Xu, J S, Zhejiang Ocean Univ, China

49. HYDRO VII: LNG, Sloshing & Impact I (V. 3)

Wednesday June 22 10:45 311BC

Chair: Hong, S Y, Korea Res Inst of Ships and Ocean, KORDI, Korea

Three-dimensional Sloshing Analysis for LNG Carriers in Irregular Waves
Park, J J, Kim, M S, Ha, M K, Samsung Heavy Industries, Korea

A 3D Numerical Method for Assessment of Impact Loads due to Sloshing in Liquid Cargo Tanks
Cheng, L Y, Univ of Sao Paulo, Brazil; Arai, M, Yokohama National Univ, Japan

Prediction of Sloshing Load in Irregular Seaways by a Numerical Simulation Method
Makiyama, H S, Arai, M, Yokohama National Univ, Japan

A Parametric and Numerical Study on LNG-tank Sloshing Loads
Lee, D H, Kim, M H, Texas A&M Univ, USA; Kwon, S H, Pusan National Univ, Korea; Kim, J W, ABS, USA; Lee, Y B, Daewoo Shipbuilding & Marine Engineering, Korea

Experimental Study on Sloshing for Large LNGC Design
Lee, Y B, Sim, I H, Kim, Y S, Daewoo Shipbuilding & Marine Engineering; Jung, J H, Park, J S, Kwon, S H, Jang, T S, Pusan National Univ, Korea

50. GEOTECH VII: Dynamic Pheonomena (V. 2)

Wednesday June 22 10:45 320BC

Chair : Wong, P C, ExxonMobil Development Co., USA
Co-Chair: Chen, Y R, Chang Jung Christian Univ, Taiwan, China

A Study on Using Conical Bottom Tamper for Dynamic Compaction in Platy Sands
Feng, T W, Chung Yuan Christian Univ, Taiwan, China

Cyclic Simple Shear Testing and Modeling of Two Calcareous Sediments
Brandes, H G, Seidman, J, Wang, S T, Univ of Hawaii, USA

On-line Pseudo-dynamic Response Tests on Clay and Sand Layers
Takahashi, N, Mitsui Sumitomo; Hyodo, M, Yamaguchi Univ; Yamamoto, Y, Sumitomo Mitsui Construction, Japan

Dynamic Shear Moduli for Sand and Clay Mixture
Hyodo, M, Yamada, S, Hyodo, T, Yamaguchi Univ, Japan

Evaluation of the Static Drained and Cyclic Undrained Behaviour of Sandy Silt and Silt
Yang, S, Sandven, R, Norwegian Univ of Science & Tech, Norway

The Effect of the Fine Content on the Shear Wave Velocity and Damping Ratio of the Reclaimed Soil
Chien, L K, Feng, T S, Shieh, T Y, National Taiwan Ocean Univ, Taiwan, China

Dynamic Deformation Characteristics of Dry and Saturated Sands under Cyclic Loadings
Kim, D S, Choo, Y W, Korea Advanced Inst of Science and Tech, Korea

Simplified Analysis of Pore Pressure Response of Layered Seabed under Wave Loading
Liu, Z, Luan, M, Dalian Univ of Tech, China

51. COASTAL IV: Breakwater 3 (V. 3)

Wednesday June 22 10:45 310A

Chair: Ueda, S, Tottori Univ, Japan
Co-Chair: Kee, S T, Seoul National Univ of Technology, Korea

Hydrodynamic Characteristics of the Permeable Breakwater Using Flow 3D Model
Ko, K O, Park, K Y, Hyundai Engineering and Construction; Kim, K H, Soft-tech International, Korea

Characteristics of Wave Reflection due to the Composite Breakwater
Hsiao, S S, Fang, H M, Lin, Y M, National Taiwan Ocean Univ, Taiwan, China

Change in Transmission Coefficient with Deformation of Submerged Breakwater
Araki, S, Osaka Univ; Niijima, H, Daiko Advertising; Fumoto, H, Miyoshi, H, Deguchi, I, Osaka Univ, Japan

Wave Reflection and Transmission over the Submerged Breakwaters Combined with Small and Large Crown Widths
Cho, W C, Chung-Ang Univ, Korea

Modelling Wave Deformation through Skirt-wall Structure by Using KU-2DVF-04
Kim, H S, Jeong, B S, Kookmin Univ, Korea

Effect of Mooring Lines Stiffness on the Performance of a Moored Floating Breakwater under the Action of Regular Waves
Loukogeorgaki, E, Angelides, D C, Aristotle Univ of Thessaloniki, Greece

Study of the Breakwater Layout to Maintain Tranquillity and Exchange Water in Small Harbor
Morita, S, Okumura Corpration; Yoon, S J, Deguchi, I, Osaka Univ, Japan

52. SUBSEA SYSTEMS (V. 1)

Wednesday June 22 10:45 311A

Chair: G. Clauss, G, TU Berlin, Germany
Co-Chair: Boswell, L F, City Univ., London, UK

A New Method of Passing Rigging for Sunken Ship Salvage
Hu, Y, Zhu, M, Wuhan Univ; Liu, S, Li, C, Guangzhou Salvage Co, China

Equipment, Tools and Procedures for Real and Near-real-time and Longterm-monitoring Subsea Stations and Networks
Gerber, H W, TFH Berlin; Clauss, G F, TU Berlin, Germany

Hydrodynamic Parameter Estimation of an Unmanned Underwater Vehicle: A Towing Tank Approach
Julca Avila, J P, Adamowski, J C, Maruyama, N, Univ of Sao Paulo, Brazil

Well Head Production Floater: Experimental and Numerical Investigation
Le Boulluec, M, Maisondieu, C, IFREMER; du Plessix, G, Cordeau, C, Saipem SA, France

Development of Risk-based Information Systems for Management of Sunken Ships
Choi, H J, Kim, H T, Lee, S H, Kang, C G, Korea Res Inst of Ships and Ocean, KORDI; Lew, J M, Chungnam National Univ, Korea

53. HPM III: Welding 1 (V. 4)

Wednesday June 22 10:45 320A

Chair: Ayer, R, ExxonMobil Research and Engineering, USA
Co-Chair: Kang, K B, POSCO, Korea

Development of Three Dimensional FEM Using Temperature Dependent Interface Element for Predicting Pear-shaped Bead Cracking under Narrow Gap Welding
Shibahara, M, Kanazawa Inst of Tech; Itoh, S, Serizawa, H, Murakawa, H, Osaka Univ; Nakamura, T, National Inst for Materials Science, Japan

Development of Single Side Single Pass Submerged Arc Welding Procedure for C-Mn Steel Plates Using Reusable Backing Strip
Mandal, N R, Maiti, R, Indian Inst of Tech Kharagpur, India

Development of Block Assembly Planning System for Robotic Welding System
Sheen, D M, Chung, J H, Univ of Ulsan, Korea

Optimization of Resistance Spot Welding Conditions on 7075-T6 Aluminum Alloy Sheets by the Taguchi Method
Lee, C S, Changwon Polytechnic College; Kim, Y K, Park, Y H, Min, B H, Yoon, H K, Dongeui Univ, Korea

54. OFFSHORE PIPELINES, RISERS, MOORING III (V. 2)

Wednesday June 22 10:45 321C

Chair : Price, J C, INTEC Engineering, USA

Numerical Simulation on Pipeline Laying for Intake Deep Ocean Water
Jung, D H, Kim, H J, Moon, D S, Korea Res Inst of Ships and Ocean, KORDI; Park, H I, Korea Maritime Univ, Korea

Wave-induced Pipeline On-bottom Stability: Comparison between Pipe-soil and Wave-pipe-soil Interaction Models
Gao, F P, Wu, Y X, Inst of Mechanics, CAS, China

Pipeline-seabed Interaction Analysis for Horizontal Cyclic Loading of Pipeline
Takatani, T, Maizuru National College of Tech, Japan

Analysis of Flow and Structure Interactions on a Floating Body with a 3D-PTV and a Motion Tracking Technique
Doh, D H, Jo, H J, Hwang, T G, Shin, D J, Sang, J W, Korea Maritime Univ, Korea; Tanaka, K, Okamoto Inc; Takei, M, Nihon Univ, Japan

Mechanics of Free Spanning Pipeline with Application to VIV Analysis of Span Segment of Buried Pipeline
Xing, J Z, Liu, C, Lanzhou Univ of Science & Tech; Duan, M L, China Classification Society, China

Seismic Response Analysis on Free Spanning Submarine Pipelines
Zhou, J, Li, X, Feng, X, Dong, R, Dalian Univ of Tech, China

Vortex-induced Vibrations of Submarine Free-span Pipelines Using Turbulent Flow Model Simulation
Wang, G X, Liang, B C, Li, H J, Ocean Univ of China, China

55. GAS HYDRATES I (V. 1)

Wednesday June 22 10:45 304A

Chair: Komai, T, National Inst of AIST, Japan

Tuning the Composition of Clathrate Hydrates for Gas Storage
Seo, Y T, Kim, D Y, KAIST; Park, J S, Lee, J W, Korea Inst of Energy Research; Lee, H, KAIST, Korea

Preliminary Study on Safety Requirements for Natural Gas Hydrate Pellet Carriers
Ota, S, National Maritime Research Inst; Arima, T, Takano, H, Nippon Kaiji Kyokai; Hirai, K, Kamei, M, Mitsui Engineering and Shipbuilding; Shirota, H, National Maritime Research Inst, Japan

Measurement of Thermal Conductivity of Hydrate Sediment Sample
Yamamoto, Y, Kawamura, T, Ohtake, M, Nakagawa, F, National Inst of AIST; Tsuji, T, Nihon Univ; Tsukada, Y, Nihon Axis, Japan

Dissociation Experiment of Hydrate Core Sample Using Thermodynamic Inhibitors
Kawamura, T, Yamamoto, Y, Ohtake, M, Sakamoto, Y, Haneda, H, AIST; Japan

A Dissociation Behavior of Methane Hydrate-bearing Sediment using High-speed X-ray CT Scanner
Kamata, Y, Sato, M, Ono, S, Ebinuma, T, Nagao, J, Minagawa, H, Omura, R, Narita, H, National Inst of AIST, Japan

Behavior of Gas Hydrate Formation in Marine Sediments for CO_2 Sequestration
Inui, M, Ando, A, Univ of Tokyo; Komai, T, Sakamoto, Y, Kawamura, T, AIST; Kagemoto, H, Sato, T, Univ, of Tokyo, Japan

Transformation of Methane Hydrate to Carbon Dioxide Hydrate: In Situ Raman Spectroscopic Observations
Yoon, J H, LG Chemical, Korea; Kawamura, T, Yamamoto, Y, AIST, Japan

56. RELIABILITY, RISK & SAFETY I (V. 4)

Wednesday June 22 10:45 304B

Chair: Langen, I, Stavanger University, Norway

Co-Chair: Kanegaonkar, H B, Samsung Heavy Industries, Korea

Review of Safety Assessment Methodologies in Marine Systems Engineering
Lee, J K, Park, B J, Lee, S S, Lee, D G, Korea Res Inst of Ships and Ocean, KORDI, Korea

Comparison of '100-year' Response Values from the Design Wave Technique with Those from the Time-domain Probabilistic Technique
Najafian, G, Univ of Liverpool, UK

Uncertainty Effects on an Offshore Structure Subjected to Wave and Seismic Forces
Kawano, K, Kimura, Y, Kagoshima Univ, Japan

Reliability Calculation of RC Offshore Structures under Extreme Wave Loading
Karadeniz, H, Delft Univ of Tech, The Netherlands

Safety Evaluation of Fenders by Reliability Analysis Considering Temperature Factors and Velocity Factors
Yoneyama, H, Port and Airport Research Inst; Shiraishi, S, Coastal Development Inst of Tech, Japan

Reliability and Availability Study on Boil-off Gas Reliquefaction System for LNG Carriers
Chang, D J, Moon, K H, Chang, K P, Lee, D H, Hyundai Heavy Industries, Korea

Optimal Design of Rubble Mound Breakwater Used by Reliability Theory
Kim, S D, Min, S J, Univ of Ulsan, Korea

Reliability Estimate Offshore Marine Hydraulic Structures at Seismic Impacts
Finagenov, O M, Glagovsky, V B, The B.E. Vedeneev VNIIG, Russia

WEDNESDAY 13:30

Plenary Presentation IV (V. 1)

Wednesday	June 22	13:30	**310BC**

New Expansion of Tokyo International Airport in Tokyo Bay: Necessity and Accountability
Kikuchi, M, Sasa, K, Miyata, M, Ministry of Land Infrastructure and Transport; Hiraishi, T, Port and Airport Research Inst, Japan

Plenary Presentation V (V. 3)

Wednesday	June 22	13:30	**311BC**

Modeling of Strongly Nonlinear Ocean Waves: Application to Freak Waves
Grilli, S T, Univ of Rhode Island, USA

57. VLFS (V. 1)

Wednesday	June 22	14:30	310BC

Chair: Takagi, K, Osaka Univ, Japan

A Dynamic Analysis of an Integrated Aircraft-floating Structure-water Interaction System Excited by the Impact of an Aircraft Landing
Xing, J T, Jin, J, Univ of Southampton, UK

Experiment on Motion of Large Elastic Floater in Directional Seas
Hiraishi, T, Okuno, M, Port and Airport Research Inst; Miyazato, I, ECOH Co, Japan

Hydro-elastic Motions and Drift Forces of Very Large Mobile Offshore Structures in Waves
Takagi, K, Noguchi, J, Osaka Univ; Kinoshita, T, Tokyo Univ, Japan

Effects of Sea-bottom Topography on Hydroelastic Response of a Pontoon Type VLFS
Kyoung, J H, Hong, S Y, Kim, B W, Cho, S K, Kim, J H, Kin, Y S, Korea Res Inst of Ships and Ocean, KORDI, Korea

Investigation of the Effect of Stiffness Distribution and Wave Length on Hydroelastic Responses of Very large Floating Structures
Kim, B W, Kyoung, J H, Hong, S Y, Cho, S K, Korea Res Inst of Ships and Ocean, KORDI, Korea

Mooring Method of Very Large Floating Structure
Nagai, M, Ameku, K, Matuda, K, Univ of the Ryukyus, Japan

Simplified Static Analysis of Superstructure on Very Large Floating Structures Subjected to Wave Loads
Son, H C, Korea Maritime Univ; Park, H S, So, J H, Yonsei Univ, Korea

Characteritics of Wave-induced Bending Moment, Twisting Moment and Shear Force in Pontoon-type VLFSs
Yasuzawa, Y, Hirano, K, Kyushu Univ, Japan

58. HYDRO VIII: LNG, Sloshing & Impact 2 (V. 3)

Wednesday June 22 14:30 311BC

Chair: Kashiwagi, M, Kyushu Univ, Japan
Co-Chair: Kim, Y H, Seoul National Univ, Korea

Two-phase Flows SPH Simulation of a Free Falling Wedge Water Entry
Oger, G, Alessandrini, B, Ferrant, P, Ecole Centrale de Nantes, France

Validation of a Numerical Code by a Particle Method for Violent Free Surface Problems
Sueyoshi, M, Kyushu Univ, Japan

Sensitivity Study on Computational Parameters for the Prediction of Slosh-induced Impact Pressures
Kim, Y H, Seoul National Univ; Lee, Y B, Kim, Y S, Daewoo Shipbuilding Marine Engineering, Korea

Numerical Simulation for the Uprising Process of a Large-scale Bubble
Li, S W, Huang, X Y, Tianjin Univ, China

Numerical Model of Three-dimensional Multiphase Flow Using CIP and Extended SMAC
Kawasaki, K, Nagoya Univ, Japan

Numerical Simulation of Violent Sloshing by CIP Method with Experimental Validation
Kishev, Z R, Hu, C H, Kashiwagi, M, Kyushu Univ, Japan

59. GEOTECH VIII: Piles &Caissons 2 (V. 2)

Wednesday June 22 14:30 320BC

Chair : Chen, J-W, National Cheng Kung Univ, Taiwan, China
Co-Chair: Al-Mahaidib, A I, King Saud Univ, Saudi Arabia

Bearing Capacity Characteristics of Separated Doughnut Auger (SDA) Pile in Clay and Silty Soils
Hong, W P, Chung-Ang Univ; Chai, S G, G.S. Engineering & Construction, Korea

Spudcan Foundation Penetration into Non-homogeneous Clay
Hossain, M S, Hu, Y, Curtin Univ of Tech; Randolph, M F, Univ of Western Australia, Australia

Evaluation of Skin Friction to Large Size Pneumatic Caissons
Hong, W P, Yea, G G, Chung-Ang Univ; Kim, T H, Korea Maritime Univ; Nam, J M, Cheju National Univ, Korea

A Study on the Bearing Capacity and Failure Mechanism of Rammed Aggregate Pier by Load Test
Chun, B S, Kim, K M, Kim, B H, Hanyang Univ, Korea

A Study on the Applicability of Copper Slag as a Substitute for Sand in Sand Compaction Pile by Field Tests
Chun, B S, Hanyang Univ; Jung, H C, ESCO Engineers & Consultants; Ryu, W R, Hanyang Univ, Korea

A Study on the Bearing capacity of IGM Socketed Drilled Shaft Considering Shaft Deformation
Chun, B S, Hanyang Univ; Seo, D D, Daelim Construction; Jung, C H, Hanyang Univ, Korea

60. COASTAL V: Typhoon & Storm Surge (V. 3)

Wednesday June 22 14:30 310A

Chair: Ryu, C R, Pukyong National Univ, Korea
Co-Chair: Tomita, T, Port and Airport Research Inst, Japan

The Coastal Hazards Warning System Based on the Operational Wave and Storm Surge Models
Yeh, S P, National Cheng Kung Univ; Lee, B C, Huafan Univ; Doong, D J, Kao, C C, National Cheng Kung Univ; Kuo, C L, Ministry of Economic Affairs, Taiwan, China

Hindcasting of Storm Surges in Korea by Typhoon 0314 (Maemi)
Kawai, H, Port and Airport Research Inst, Japan; Kim, D S, Korea Maritime Univ; Kang, Y K, Samsung Corp, Korea; Tomita, T, Hiraishi, T, Port and Airport Research Inst, Japan

Storm Surge Resonance during the Passage of Typhoon "Maemi"
Kang, Y Q, Pukyong National Univ, Korea

Applciation of Numerical Simulation and Correlation Method in Calculating Storm Surge Elevation with Certain Return Years
Wang, X Q, Ocean Univ of China, China

Estimation of Storm Surge Caused by Typhoon 0315 (Maemi) in Masan Bay, Korea
Kang, S W, Jun, K C, Korea Ocean R&D Inst, Korea

Response of Narugashima Beach to Severe Storm Caused by Typhoon No.10 2003
Arimitsu, T, Kansai Electric Power; Deguchi, I, Araki, S, Osaka Univ; Japan; Zhang, Y Z, Nanjing Univ, China

Characteristics of the Storm Surge and High Waves in Coast Area of the Southeast Korea during the Typhoon Maemi
Ryu, C R, Yoon, H S, Pukyong National Univ, Korea

Coastal Water Level Variation due to Storm Surges at Busan Harbor
Lee, J W, Korea Maritime Univ; Kwon, S H, Busan Port Authority; Kim, K M, Korea Maritime Univ, Korea

Mitigation of Abnormally High Storm Surge at Tosa Bay by Construction of Breakwater
Shibaki, H, ECOH Corp; Kim, J I, GeoSystem Research Corp; Tanabe, M, Kochi Ports and Airport Construction, Japan

61. GEOTECH IX: Liquefaction (V. 2)

Wednesday June 22 14:30 311A

Chair : Matsui, T, Fukui Univ of Tech, Japan
Co-Chair: Yang, S, Norwegian Univ of Science & Tech, Norway

Sequence of Soil Liquefaction under Waves
Sumer, B M, Hatipoglu, F, Fredsøe, J, Technical Univ of Denmark, Denmark

Evaluation of Liquefaction Potential Base on Fuzzy Theory and Genetic Algorithm
Chen, Y R, Hsieh, S C, Liang, H Y, Tsai, C G, Chang Jung Christian Univ, Taiwan, China

Assessing the Soil Liquefaction Potential under Uncertainty Based on the Evidence Theory
Chi, Y Y, Lee, S Y, Chang Jung Christian Univ; Lee, Y F, Natioanl Cheng Kung Univ, Taiwan, China

The Annual Probability of Soil Liquefaction for Yuanlin, Taiwan
Lee, Y F, National Cheng Kung Univ; Chi, Y Y, Chang Jung Christian Univ; Lee, D H, National Cheng Kung Univ, Taiwan, China

Stone Column Remediation of Liquefiable Silty Marine Foundation Deposits
Adalier, K, Florida State Univ; Elgamal, A, Univ of California-San Diego, USA

Ground Penetrating Radar Investigations for Liquefaction Features: A Case Study of the Chang-Hwa Coastal Industrial Park, Taiwan
Hsu, C C, Lee, D H, National Cheng Kung Univ, Taiwan, China

Evaluation of Wave-induced Liquefaction in a Porous Seabed: Using an Artificial Neural Network (ANN) and a Genetic Algorithm (GA)-based Model
Cha, D H, Hong, Z, Blumenstein, M, Griffith Univ; Jeng, D S, Univ of Sydney, Australia

62. HPM IV: Welding 2 (V. 4)

Wednesday June 23 14:30 320A

Chair: Fairchild, D, ExxonMobil Upstream Research Co., USA
Co-Chair: Ames, N, EWI, USA

Development of High-performance Steel with Excellent Weldability
Kang, K B, POSCO, Korea

Development of Yb Fibre Laser/MAG Hybrid Procedures for Girth Welding of Pipelines
Howse, D S, Booth, G, Scudamore, R, TWI; Howard, R, BP Exploration, UK

Use of PE-GTAW to Control Microstructure in Duplex Stainless Steels
Ames, N, EWI; Frye, C, ExxonMobil Development, USA; Larsen, K, Sandvik Materials Tech, Sweden,

Inclusion Metallurgy in Welding
Komizo, Y, Osaka Univ, Japan

Hybrid Welding of Ti Alloys
Shinn, B, Denney, P, EWI, USA

Mechanically Control Pulsed Short Circuit GMAW of Advanced Alloys
Stanzel, D, Miller Electric; Dierkshiede, J, Boyd, C, Ames, N, EWI, USA

63. FLOW-INDUCED VIBRATIONS (V. 2)

Wednesday June 22 14:30 321C

Chair: Miksad, R W, Univ of Virginia, USA
Co-Chair: Fontaine, E, Institut Francais du Petrole, France

Simulation of High Reynolds Number Flow Past Arrays of Circular Cylinders Undergoing Vortex-induced Vibrations
Pontaza, J, Chen, C R, Chen, H C, Texas A&M Univ, USA

Experimental Study on Vortex Induced Vibration with an Elastically Mounted Sphere in a Pipe
Grinis, L, Tzadka, U, Sami Shamoon College of Engineering, Israel; Krakovskii, Y M, Irkutsk State Academy of Economics, Russia

Stability and Bifurcation Analysis of a Forced Cylinder Wake
Mureithi, N W, Rodriguez, M, École Polytechnique de Montreal, Canada

Numerical Study of Fluid Force Reduction on a Circular Cylinder Using Tripping Rods
Zhou, C Y, Huang, W, Harbin Inst of Tech, China

Dynamics of a Cylinder Mounted on an Elastic Base: A Numerical Simulation
Martins, S B C, Sphaier, S H, COPPE/UFRJ, Brazil

Cable Vibration Considering Internal Friction
Liu, X, Knapp, R H, Univ of Hawaii, USA

Vortex-induced Vibration of a Circular Pile in Slowly Fluctuating Tidal Current
Nagao, F, Noda, M, Arima, E, Utsunomiya, H, Univ of Tokushima, Japan

Riser Interference and VIV Amplification in Tandem Configuration
Fontaine, E, Morel, J P, Rippol, T, Scolan, Y M, Institut Francais du Petrole, France

Experimental Study on Vortex-induced Vibration and Dynamic Characters of Marine Pipeline
Huang, W P, Li, H J, Wang, A Q, Ocean Univ of China, China

64. GAS HYDRATES II (V. 1)

Wednesday June 22 14:30 304A

Chair: Lee, H, KAIST, Korea
Co-Chair: Yamamoto, Y, AIST; Japan

Mechanical Properties of Methane Hydrate-bearing Sands
Hyodo, M, Nakata, Y, Yoshimoto, N, Terada, K, Yamaguchi Univ, Japan

Effects of Methane Hydrate Formation on Tri-axial Compressisve Strength of Synthetic Methane Hydrate Sediments
Ogata, Y, Masui, A, Haneda, H, Aoki, K, National Inst of AIST, Japan

Laboratory Experiments to Investigate Hydrate Destabilization
Kuroda, K, Masutani, S M, Nihous, G C, Univ of Hawaii, USA; Okuno, T, Osaka Prefecture Univ, Japan

Catalytic and Absorption Techniques for Gas Hydrates Development
Mel'gunov, M S, Boreskov Inst of Catalysis, RAS, Russia

Simulation of Methane Hydrate Extraction: From Laboratory Experiments to Field Scale Tests
Pawar, R, Los Alamos National Lab, USA; Tenma, N, Sakamoto, Y, Inst for Georesources & Environment, AIST, Japan; Zyvoloski, G, Los Alamos National Lab, USA

Field Scale Simulation for Effects of Permeability Distribution and Anisotropy on Gas Hydrate Dissociation and Gas Production Behavior in Marine Sediments
Sakamoto, Y, Komai, T, Kawamura, T, Tenma, N, Yamaguchi, T, AIST, Japan

65. RELIABILITY, RISK & SAFETY II (V. 4)

Wednesday June 22 14:30 304B

Chair: Karadeniz, H, Delft Univ of Technology, The Netherlands
Co-Chair: Kwon, Y S, Chosun Univ, Korea

Fire Risk Modelling of Machinery Space: An Application of Approximate Reasoning Approach (Fuzzy Averaging Method) in Passenger Ship Engine Room
Kim, S W, Liverpool John Moores Univ, UK; Kwon, Y S, Chosun Univ, Korea; Wall, A, Wang, J, Liverpool John Moores Univ, UK

Fuzzy Nonlinear Dynamics of Structural Systems under Explosion Loads
Kanegaonkar, H B, Samsung Heavy Industries, Korea

Structural Damage Alarming by Novelty Detection Technique Based on Modal Flexibility
Sun, Z G, Dalian Maritime Univ, China

Development of Health Monitoring System for Ocean Offshore Platform with Fiber Bragg Grating Sensors
Ren, L, Li, H N, Zhou, J, Sun, S, Li, D S, Dalian Univ of Tech, China

Effect of Culture and Organizational Aspects on Fishing Vessel Accidents
Anthony, J C, Kwon, Y S, Chosun Univ, Korea

Simulation of an Advanced Evacuation Analysis for Passenger Ship
Ahn, D, Kang, Y T, Youn, Y P, Samsung Heavy Industries, Korea

Measuring Fractal Nature of Heat Rate Variability and Task Loads for Establishing Navigation Support System
Fukuchi, N, Shinoda, T, Kyushu Univ, Japan

WEDNESDAY 19:00

Conference Annual Banquet
19:00 COEX Intercontinental Hotel

THURSDAY 08:00

66. OFFSHORE SYSTEMS (V. 1)

Thursday June 23 08:00 310BC

Chair: Jo, C H, Inha Univ, Korea

Record Setting Super Lift for Floating Production Unit
Kim, Y S, Cho, K R, Lim, S M, Hyundai Heavy Industries, Korea

Initial Design of Offshore Floating Marine System
Chung, H, Oh, T W, Namgoong, S, Kim, S B, Ocean Space; Jo, C H, Inha Univ, Korea

Transient Response Analysis of Rotor-Bearing System under Base-excited Shock Forces
Kim, B O, Korea Inst of Machinery and Materials; Kim, Y C, Yeungnam Univ; Lee, A S, Korea Inst of Machinery and Materials, Korea

Automatic Bottom Identification and Horizontal-axis Conversion of Single Channel Marine Seismic Data
Kim, J H, Kim, H D, Dong-A Univ, Korea

Experimental Study of Hydrocyclone under Cyclic Flow Condition
Zhao, L X, Jiang, M H, Daqing Petroleum Inst, China

67. HYDRO IX: Remote Sensing (V. 3)

Thursday June 23 08:00 311BC

Chair: Jenkins, A D, Univ of Bergen, Norway
Co-Chair: Yim, J, National Taiwan Ocean Univ, Taiwan, China

GPS Buoy and Seabed Installed Wave Gauge Application to Offshore Tsunami Observation
Nagai, T, Satomi, S, Port and Airport Research Inst; Terada, Y, Hitachi Zosen Corp; Kato, T, Univ of Tokyo; Nukada, K, Coastal Development Inst of Tech; Kudaka, M, Ecoh Co, Japan

Evaluation of Operational Man-machine Mix Regional Wave Forecasting System – The Role of In-situ Wave Predictors
Lee, B C, Huafan Univ; Liao, M Y, Longmen Nuclear Power Plant; Chien, H, Chen, P H, Chiou, M D, National Cheng Kung Univ, Taiwan, China

A Parametric Inversion Scheme for Spaceborne SAR Measurements of 2-D Wave Spectra
Schulz-Stellenfleth, J, Nieto Borge, J C, German Aerospace Center, Germany; Lehner, S, Univ of Miami, USA

Analysis of Near Shore Wave Fields by Using Spaceborne SAR Observations
Nieto Borge, J C, Schneiderhan, T, Niedermaier, A, Schulz-Stellenfleth, J, German Aerospace Center, Germany

Surface Waves and Atmospheric Near-surface Layer Variability above Features of Bottom Topography
Bakhanov, V V, Inst of Applied Physic, RAS; Repina, I A, A.M. Obukhov Inst of Atmospheric Physics, RAS; Sidorov, A V, Titov, V I, Troitskaya, Y I, Zuikova, E M, Inst of Applied Physics, RAS; Russia

Optimal Mapping for Artificial Reef Facility Using Remote Sensing and GIS
Kim, J K, Yosu National Univ; Kim, J H, National Oceanographic Research Inst; Park, I H, Lee, M O, Yosu National Univ, Korea

68. GEOTECH X: Pile & Caissons 3 (V. 2)

Thursday June 23 08:00 320BC

Chair : Uchida, K, Kobe Univ, Japan
Co-Chair: Hong, W P, ChungAng Univ, Korea

Global and Local Scour around Pile Groups
Sumer, B M, Fredsøe, J, Bundgaard, K, Technical Univ of Denmark, Denmark

Lateral Load Tests on Precast Reinforced Concrete Piles Made with CCP Concrete Comosites
Kumar, S, Puri, V K, Southern Illinois Univ; Kort, D, Loadtest Inc; Alarcon, C, Southern Illinois Univ, USA

Optical Analysis of Stress and Strain around Penetrating Elements in a Granular Medium
Allersma, H G B, Delft Univ of Tech, The Netherlands

Presentation of Various Applications for Cantilever Diaphragm Wall
Jung, D H, Pukyong National Univ; Jung, G H, Han, K T, You, J Y, Dong-A Geological Engineering, Korea

Experimental Study on the Circular Rock-Filled Cages Skirted Group Piles Capacity in Kao-Ping River
Shao, K Y, I-Shou Univ; Tsai, C L, Ministry of Transportation and Communications; Taiwan, China

Behavior of Clay Ground Reinforced by Sand Compaction Pile
Kim, S S, Han, S J, Hanyang Univ; Shin, H Y, Chungnam Univ; Kim, J K, Samsung Co, Korea

69. COASTAL ENG VI: Waves 1 (V. 3)

Thursday June 23 08:00 310A

Chair: Teng, B, Dalian Univ of Technology, China
Co-Chair: Kim, D S, Korea Maritme Univ, Korea,

An Enhanced Fully Nonlinear Wave Model in Surf Zone
Ma, X Z, Dong G H, Teng, B, Dalian Univ of Tech, China

Physical Investigation of Directional Wave Focusing and Breaking in Shallow Water
Liu, S X, Li, J X, Dalian Univ of Tech, China; Hong, K Y, Korea Res Inst of Ships and Ocean, KORDI, Korea; Meza, E, National Polytechnic Inst, Mexico

Generation of Subharmonics by Shoaling Waves
Stiassnie, M, Drimer, N, Coastal and Marine Engineering Research Inst, Israel

Expected Overtopping Probability Considering Real Tide Occurrence
Kweon, H M, Gyeongju Univ, Korea

Effects of Currents on Wave Transformations
Lin, M C, Hsu, C M, Ting, C L, National Taiwan Univ, Taiwan, China

Experimental Verification of a Numerical Procedure Developed for the Dynamic Analysis of Wave Propagation in Saturated Granular Soils
Song, C Y, Kim, C W, Daelim Industrial, Korea; Wolfe, W E, Ohio State Univ, USA

70. ENVIRONMENT I: Remote Sensing (V. 1)

Thursday June 23 08:00 311A

Chair: Kang, C G, Korea Res Inst. of Ship and Ocean, Korea
Co-Chair: Song, M S, Hongik Univ, Korea

Harmonized Transportation System to Support the Recycle-based Society
Shinoda, T, Fukuchi, N, Kyushu Univ; Reikan, F, NYK LINE, Japan

Global Warming Skeptics: Are Their Doubts Scientifically Valid?
Watts, R G, Tulane Univ, USA

Environmental Impact Assessment for Large-scale Deep Ocean Water Utilization
Otsuka, K, Osaka Prefecture Univ; Ikeda, T, Hayashi, M, The General Environmental Technos, Japan

Estimation Method for Vertical Distribution of Phytoplankton at the Western Equatorial Pacific Ocean
Nakatani, N, Osaka Prefecture Univ; Shiozaki, T, Marine Works Japan; Okuno, T, Osaka Prefecture Univ, Japan

Field Surveys of Transport Processes in the Kitan Strait Connecting Osaka Bay and the Pacific Ocean
Kim, H G, Nishida, S, Nakatsuji, K, Osaka Univ, Japan

On the Detection Method of Oil Leakage from Sunken Wrecks and Estimation of Quantity of Remained Oil Using Ultrasonic Wave
Hoshino, K, National Maritime Research Inst; Niida, N, Nihon Univ; Shimada, M, Hara, S, Hitomi, K, Kameyama, M, Yamanouchi, H, Kiriya, N, Hori, T, Sasano, M, Hikida, K, National Maritime Research Inst; Takeda, M, Nihon Univ, Japan

The Risk of Oil Spillage at Mirfa Power and Desalinationa Plant
Mohamed, K A, Odeh, M, Water & Power Research Center, UAE

Treatment of ASP Produced Water with Hydrophilic Fibre Ball Filtration
Liu, S M, Shanghai Jiao Tong Univ; Dong, X Q, Zhao, X F, Daqing Oilfield Co; Zhang, Z J, Shanghai Jiao Tong Univ; Du, W, Daqing Oilfield Co, China

Application of a Genetic Algorithm to the Design of Groundwater Monitoring Well Networks under Conditions of Uncertainty
Inoue, K, Masaki, I, Tanaka, T, Kobe Univ, Japan

71. HPM V: Steel, Fabrication & NDE (Vol. 4)

Thursday June 23 08:00 320A

Chair: Pontremoli, M, Centro Sviluppo Materiali, Italy
Co-Chair: Kim, D S, Shell Global Solutions, USA

Effects of Cooling on the Microstructure and Mechanical Properties of B-added Low Carbon HSLA Steels
Kang, J S, Jun, H J, Pohang Univ of Science and Tech; Seo, D H, Kang, K B, POSCO; Park, C G, Pohang Univ of Science and Tech, Korea

Development of YS 420MPa Class TMSP Steel Plates for Offshore Structures
Suh, I S, Hong, H U, Kim, S H, Kang, K B, Lee, J B. Choo, W Y, POSCO, Korea

Formation of Acicular Ferrite and Its Effects on Mechanical Properties of Linepipe Steels
Kim, Y M, Lee, H C, Kim, N J, Pohang Univ of Science and Techn, Korea

Effects of H2S Partial Pressure and pH of Test Solution on the Hydrogen Induced Cracking of Line Pipe Steels
Kim, W K, Koh, S U, Kim, K Y, Pohang Univ of Science and Techn; Yang, B Y, Kang, K B, Pohang Iron & Steel, Korea

Ni-Al Intermetallic Compound Coating on 304 Austenitic Stainless Steel Using Combustion Synthesis
Okamoto, A, Ueda, N, Demizu, K, Sone, T, Tech Research Inst of Osaka Prefecture; Ikenaga, A, Osaka Prefecture Univ; Hirose, Y, Kanazawa Univ, Japan

Oxidation Resistance and Improvement of Corrosion Resistance by Surface Modification Ni20Cr20Fe5Nb1Y203 Alloy with Nano-sized Grain
Kim, I H, Korea Univ; Kim, Y H, Korea Inst of Industrial Techn; Kim, C S, Korea Univ, Korea

Optimization of Friction Welding for Dissimilar Steel Bars and Some Fatigue Tests
Kim, S J, Kong, Y S, Kwon, S W, Pukyong National Univ, Korea

Development of Prediction Model for Precipitates Kinetics and Austenite Grain Growth in the Weld Heat Affected Zone
Lee, C H, Moon, J O, Uhm, S H, Hanyang Univ; An, Y H, Lee, J B, POSCO, Korea

72. OFFSHORE PIPELINES, RISERS, MOORING IV (V. 2)

Thursday June 23 08:00 321C

Chair : Park, H I, Korea Maritime Univ, Korea

An Experimental and Numerical Study on Vortex Induced Vibrations of a Long Flexible Riser Undergoing Irregular Motion at Its Top End
Senga, H, Koterayama, W, Kyushu Univ, Japan

Nonlinear Beam Elements for Highly Flexible Risers and Pipelines
Katsaounis, G M, National Technical Univ of Athens, Greece

Highly Efficient Modal Analysis Method Based on Limited Number of Sensors
Prislin, I, BMT Scientific Marine Services, USA

Command and Control of Subsea Well Completions by Means of Acoustic Communications
Green, D, Benthos, USA

Flexible Riser Fatigue Design and Testing
Lemos, C A D, Petrobras; Vaz, M A, COPPE/UFRJ, Brazil

Nonlinear Analysis of Seabed Interaction and Mooring Cable Dynamics with a Finite Element Approach
Yu, L, Tan, J H, Shanghai Jiao Tong Univ, China

Estimation of the Typhoon Winds and Ocean Wave Forces for Mooring System Design Considering Local Topographic Effects around Fabrication Yard
Yang, Y T, Hyundai Heavy Industries; Jeong, W M, Korea Ocean R&D Inst; Kim, S C, Leewoos Co, Korea

On the Mooring Line Tension of the Tanker by Dolphin Mooring in Wind and Waves
Hara, S, Tanizawa, K, Hoshino, K, Kano, T, Yamakawa, K, National Maritime Research Inst, Japan

Comparison on the Mooring Line force and Cage Movement Characteristics of Gravity and Sea Station Cages
Li, Y C, Gui, F K, Dalian Univ of Tech; Song, F, Inst of Mechanics, CAS; Teng, B, Dalian Univ of Tech, China

Selection Procedure for Optimal Size of Mooring Buoy Chain by Introduction of Elastic Type Chain
Tokubuchi, K, Shibata Industrial; Takayama, T, Kyoto Univ, Japan

73. ARCTIC & ICE I: Environment (V. 1)

Thursady June 23 08:00 304A

Chair: Sayed, M, National Research Council, Canada
Co-Chair: Choi, K S, Korea Maritime Univ, Korea

Entropy Production and Polar Economic Activity
Jenkins, A D, Univ of Bergen, Norway

The Coordination of Variations of Parameters Describing Polar Environment, on the Example of the European North
Vidyakina, S V, Pomor State Univ, Russia

Accurate Ice Shape Predictions
Verdin, P G, Soufflet, Y B, Thompson, C P, Cranfield Univ, UK

The Frost Heaving Pressure Characteristics of Frozen Soils in Korea: A Laboratory Test
Shin, E C, Park, J J, Univ of Incheon, Korea; Das, B M, California State Univ Sacramento, USA

Aplication of Powering Requirements for Operations in Ice
Menon, B, Lee, S K, American Bureau of Shipping, USA

74. IMPACT, COLLISION, DAMAGE I (V. 4)

Thursday June 23 08:00 304B

Chair: Shibue, T, Kinki Univ , Japan
Co-Chair: Tsubogo, T, Osaka Prefecture Univ, Japan

Numerical Study on the Effect of Buffer Bow Structure in Ship-to-ship Collision
Yamada, Y, Endo, H, National Maritime Research Inst, Japan

A Numerical Simulation of Stress Loosening of a Bolt Connection under the Impact Load
Shibue, T, Kinki Univ; Yamamoto, M, Ishikawajima-Harima Heavy Industries, Japan

Collision Analysis Using Analytical Approach
Han, S M, Ito, H, Suh, Y S, Samsung Heavy Industries, Korea

Impact Analysis of Greater Plutonio GPSO from Ship Collision
Oh, M H, Kim, J H, Jang, Y S, Hyundai Heavy Industries, Korea; Koster, T E, BP Exploration Operating Co, UK

Review of IMO Regulations Related to Ship Collision Using Full Scale Numerical Simulations
Lee, S G, Korea Maritime Univ ; Song, M K, Jang, H S, Samsung Heavy Industries ; Shin, Y S, Hyundai Heavy Industries, Korea

Prediction of Collision Speed and Angle of Blow on Collision Acident Using Full Scale Numerical Simulation
Lee, S G, Kwon, J I, Lee, J Y, Kwak, M J, Korea Maritime Univ, Korea

Research on the Crashworthiness of a Y-shape Side Structure Design for FPSO
Hu, Z Q, Gu, Y N, Gao, Z, Shanghai Jiao Tong Univ, China

75. GEOTECH XI: Seismic Phenomena (V. 2)

Thursday June 23 08:00 307AB

Chair : Nabeshima, Y, Osaka Univ, Japan

Investigation of Rigid Embedded Structure Interaction with Saturated Soil under Seismic Excitation
Noorzad, A, Tehran Univ; Noorzad, A, Ministry of Energy; Hajmirzaali, Tehran Univ, Iran

Seismic Settlement of a New Reclaimed Land
Ku, C S, I-Shou Univ; Lee, D H, Tsai, P H, National Cheng Kung Univ, Taiwan, China

Seismic Cyclic Loading History Effects on Small-strain Shear Modulus of Saturated Sands
Zhou, Y G, Chen, Y M, Zjejiang Univ, China

Seismic Stability and Seismically Induced Sliding Displacement of Slopes under Simultaneous Horizontal and Vertical Seismic Acceleration

Zhan, L, Tian, L M, Dalian Univ of Tech, China

Resesarch on the Dynamic Action of Earthquakes Contributing to Uplifting of Underground Structures
Nakase, H, Suehiero, O, Tokyo Electric Power Services, Mohri, Y, National Research Inst for Rural Engineering; Kawabata, T, Kobe Univ, Japan

Laboratory Correlation-based Methods for Liquefaction Potential Evaluation with Shear Wave Velocity
Zhou, Y G, Chen, Y M, Zhejiang Univ, China

THURSDAY 10:45

76. SPAR & TLP (V. 1)

Thursday June 23 10:45 310BC

Chair: Duggal, A S, FMC-SOFEC, USA
Co-Chair: Kim, M H, Texas A&M Univ, USA,

Nonlinear Dynamic Response of Floating Circular Cylinder with Taut Tether
Zeng, X H, Shen, X P, Wu, Y X, Institute of Mechanics, CAS, China

An Experimental Study on the Extreme Motion Responses of SPAR Platform in the Heave Resonance Waves
Hong, Y P, Choi, Y H, Hong, S K, Kim, S E, Samsung Heavy Industries, Korea

An Experimental Study on Motion Characteristics of Cell Spar Platform
Lim, S J, Choi, H S, Seoul National Univ, Korea

Structural Safety Verification for Kizomba-B Extended Tension Leg Platform
Jun, S H, Shim, C S, Kim, H S, Lee, G Y, Kang, J K, Heo, J H, Daewoo Shipbuilding & Marine Engineering, Korea

Surge Motion of Mini TLP in Random Seas – Comparison between Experiment and Theory
Kim, N S, Kim, C H, Texas A&M Univ, USA

A Feasibility Study for Mini Tension Leg Platform Based on Its Motion
Kang, D H, Daewoo Shipbuilding & Marine Engineering; Roh, J B, Choi, H S, Seoul National Univ, Korea

Motion Simulations of a Mini Tension Leg Platform Applicable for GOM
Kang, D H, Daewoo Shipbuilding & Marine Engineering; Roh, J B, Choi, H S, Seoul National Univ, Korea

77. HYDRO X: Dynamics & Forces 1 (V. 3)

Thursday June 23 10:45 311BC

Chair: Naito, S, Osaka Univ., Osaka, Japan
Co-Chair: Varyani, K S, Univ of Glasgow and Strathclyde, UK

Design Evaluation in the Aspects of Hydrodynamics on a Prototype Semi-submersible with Rectangular Cross-Section Members
Lee, Y W, Incecik, A, Chan, H S, Univ of Newcastle upon Tyne, UK

Identification of Hydrodynamic Coefficients for Foundation Piles
Perry, M J, National Univ of Singapore, Singapore; Sandvik, P C, MARINTEK, Norway

Hydrodynamic Data for Ventilated Structures
Sandvik, P C, Solaas, F, MARINTEK; Nielsen, F G, Norsk Hydro, Norway

Numerical and Experimental Study of Free Surface Flows around Two Vertical Cylinders
Shin, Y S, Halla Univ; Jo, C H, Inha Univ, Korea

Estimation of Environmental Loads on Offshore Vessels
Yuck, R H, Seoul National Univ; Hong, S Y, Korea Res Inst of Ships and Ocean, KORDI; Choi, H S, Seoul National Univ, Korea

Combination of Long-term Extreme Loads in Ships and Offshore Structures
Kim, B K, American Bureau of Shipping, USA

78. GEOTECH XII: Piles & Caissons 4 (V. 2)

Thursday June 23 10:45 320BC

Chair : Kim, S S, Hanyang Univ, Korea
Co-Chair: Garnier, J, Laboratoire Central des Ponts et Chausses, France

The Stress State and Deformation of Sandy Ground Established by Sand Compaction Pile Installation
Priyankara, N H, Kazama, M, Uzuoka, R, Sento, N, Tohoku Univ, Japan

Design and Execution Control of Steel Pile Foundation Method for House in Japan
Mizutani, Y, Kanematsu-NKK; Sato, H, Nihon Univ; Tamura, M, Building Research Inst; Kawamura, M, Kouda, M, Nihon Univ; Ito, Y, OYO Corp, Japan

Behavior of Steel Pile under Compression and Pullout Test
Islan, M S, Ameen, S F, Hossain, T R, Seraj, S M, Bangladesh Univ; Mahmud, S, Eastern Refinery Limited; Tipnis, A A, Nath, R, Gammon India Limited, Bangladesh

A Generalised Failure Surface for Caisson Foundations in Undrained Soils
Taiebat, H A, Univ of Tech Sydney, Australia

Shearing Rate Effect on Interfacial Friction between Sand and Steel
Al-Mhaidib, A I, King Saud Univ, Saudi Arabia

Analysis of Vertical Loads Acting on Embankment Piles
Hong, W P, Lee, J H, Lee, K W, Chung-Ang Univ, Korea

Load Transfer Characteristics of Pile Considering Ground Conditions
Hong, W P, Han, J G, Chung-Ang Univ; Korea

79. COASTAL VII: Tsunami & Waves 2 (V. 3)

Thursday June 23 10:45 310A

Chair: Hiraishi, T, Port and Airport Research Inst, Japan
Co-Chair: Lin, M C, National Taiwan Univ, Taiwan, China

Tsunami Intrusion into a Harbor Protected with a Surface-piercing Vertical Barrier
Lee, J L, Sungkyunkwan Univ; Kim, I H, Donghae Univ, Korea

Estimation of Tsunami by 3D Model
Tomita, T, Kakinuma, T, Port and Airport Research Inst, Japan

Stem Wave Simulation with Nonlinear Dispersive Wave Equations
Woo, S B, Inha Univ, Korea

Analysis of Diffraction-radiation Problem by the Meshless Method
Lee, J, Cho, W, Yonsei Univ, Korea

Harbor Response due to Port Construction of a Large Scale in a Bay
Jeon, M S, Lee, J W, Korea Maritime Univ; Lee, H S, Ulsan New Container Terminal Corp; Lee, H, Korea Maritime Univ, Korea

The Depth Effect on Transverse Waves
Deng, L M, Chwang, A T, Univ of Hong Kong, China

80. ENVIRONMENT II: Pollutant Transport (V. 1)

Thursday June 23 10:45 311A

Chair: Sayed, M, National Research Council, Canada
Co-Chair: Shinoda, T, Kyushu Univ, Japan

Mass Balance Eco-model for Impact Estimation of Possible Methane Leakage during Methane Hydrate Utilization
Yamazaki, T, National Inst of AIST; Monoe, D, Chuden CTI; Nakata, K, Tokai Univ; Fukushima, T, Ship and Ocean Foundation, Japan

Marine Litter in the Ports of the Republic of Korea
Kang, W S, Kang, S G, Lee, M J, Lee, S H, Kang, C G, Korea Res Inst of Ships and Ocean, KORDI, Korea

Sediment Transport and River Plume Modeling in the South Coast of Korea
Kim, C K, Namhae College, Korea

Field Investigation on Turbidity Caused by Dredging Using the Watertight Bucket
Matsuda, N, Gomyo, M, Toa Corp; Matsubara, Y, Hinokidani, O, Kuroiwa, M, Tottori Univ, Japan

Simulation of Wave-induced Transport of Contaminants in Marine Sediment
Jeng, D S, Univ of Sydney, Australia

Outline of the Integrate Treatment System to Marine Debris for Offshore Korea
Jung, R T, Sung, H G, Kim, S D, Kang, W S, Kang, C G, Korea Res Inst of Ships and Ocean, KORDI, Korea

The Analysis of Suspended Particulate Sediments Behavior in the Nakdong River Estuary
Kim, K H, Lee, I C, Pukyong National Univ, Korea

Study on Ballast Water Exchange for Prevention from Biological Hazard
Shinoda, T, Fukuchi, N, Nishimura, K, Kyushu Univ, Japan

81. HPM VI: Steel, Fabrication & NDE II (V. 4)

Thursday June 23 10:45 320A

Chair: Murakawa, H, Osaka Univ, Japan
Co-Chair: Lee, J S, Univ of Ulsan, Korea

A Study on the Metallurgical and Mechanical Characteristics of the Weld Joint of X80 Steel
Kim, C M, Lee, J B, Yoo, J Y, POSCO, Korea

Effect of Additive Power and Filler Metals on Mechanical Properties of Wide-gap Brazed Ni-based Superalloy
Kim, Y H, Korea Inst of Industrial Tech; Kim, I H, Kim, C S, Korea Univ; Kim, K T, Korea Inst of Industrial Tech, Korea

Application of Structural Stress for the Assessment of Fatigue Behavior in Welded Structures
Kim, M H, Kang, S W, Lee, J M, Kim, D H, Jang, Y W, Pusan National Univ, Korea

Mechanical Characteristics of Welded Joint in 2.25Cr-1Mo Steel for Various Heat Sources
Bang, H S, Kim, Y P, Bang, H-S, Chosun Univ, Korea

Fracture, Fatigue and Stress Corrosion Performance of High Pressure Downhole Tubing System
Kim, D S, Shademan, S, Cernocky, P, Shell Global Solutions, USA

Strain Capacity of Line Pipe with Yield Point Elongation
Tsuru, E, Shinohara, Y, Terada, Y, Asahi, H, Nippon Steel, Japan

Fatigue Behaviours of Electric Resistance Welded Seams in API-X70
Hong, H U, Kim, C M, Lee, J B, POSCO, Korea

Analysis on Mathematical Models for Flame Deformation Correction
Mo, L X, Zhou, B, Liu, Y J, Deng, W P, Wang, J, Guo, P J, Dalian Univ of Tech, China

An Efficient Analysis for Plate Bending in Line Heating Considering Water Cooling Conditions
Jang, C D, Kim, J S, Ha, Y S, Seoul National Univ; Lee, Y H, Dongyang Technical College, Korea

82. OCEAN MINING I (V. 1)

Thursday June 23 10:45 321C

Chair: Hong, S, Korea Res Inst of Ships and Ocean, KORDI, Korea
Co-Chair: Vranka, F, Interoceanmetal Joint Organization, Poland

Polymetallic Nodules Processing in Interoceanmetal: The Present and the Future
Vranka, F, Kotlinski, R, Interoceanmetal Joint Organization, Poland

The Effect of High-power Electromagnetic Pulses on Physicochemical Properties of Sulfide Minerals and Mechanisms of Disintegration of Mineral Complexes
Bunin, I J, Chanturiya, V A, Ivanova, T A, Kovalev, A T, IPKON RAS, Russia

Sensitivity Analyses for Development of Manganese Nodules and Cobalt-rich Manganese Crusts
Park, S H, Yamazaki, T, National Inst of AIST, Japan

Behavior of Discharged Water from Ocean Nutrient Enhancer "TAKUMI"
Bando, A, Saga Univ; Sakurazawa, S, Xenesys Inc; Umeki, M, Saga Univ; Ouchi, K, Ouchi Ocean Consultant; Ikegami, Y, Saga Univ, Japan

83. ARCTIC & ICE II: Ice Breaking (V. 1)

Thursady June 23 10:45 304A

Chair: Kioka, S, Civil Engineering Res Inst of Hokkaido, Japan
Co-chair: Tang, C C L, Bedford Inst of Oceanography, Canada

Local Ice Pressures on the CCGS Terry Fox
Frederking, R, Johnston, M, Canadian Hydraulics Centre, NRC, Canada

Development of 115K Tanker Adopted Baltic Ice Class 1A
Kim, H S, Ha, M K, Ahn, D, Kim, S H, Park, J W, Samsung Heavy Industries, Korea

Hull Form Development of an Ice Breaking Tanker with Bulbous Bow
Ahn, D, Kim, H S, Ha, M K, Samsung Heavy Industries, Korea; Molyneux, D, NRC-CNRC, Canada

On the Abrasion of Offshore Structure Due to Sea Ice Movement
Takeuchi, T, Hachinohe Inst of Tech; Nakazawa, N, System Engineering Research; Mikami, T, Watanabe, Y, Saeki, H, Hokkaido Univ, Japan

Stress-strain State Analysis and Selection of Rational Parameters of Concrete-filled Steel Structures for Offshore Ice-resistant Fixed Platforms
Toropov, E E, Gintovt, A R, SOE CDB ME "Rubin"; Ginzburg, S M, JSC "Vedeneev VNIIG", Russia

84. WAVE IMPACT I (V. 4)

Thursday June 23 10:45 304B

Chair: Yun, C B, KAIST, Korea
Co-Chair: Arai, M, Yokohama National Univ, Japan

Experimental Study on Behavior of Container on Apron due to Tsunami and Its Impact Load
Mizutani, N, Yamaguchi, S, Tomita, T, Miyajima, S, Nagoya Univ, Japan

Numerical Analysis of Wave Impact on Ships with Deck Wetness Using a Particle Method
Koshizuka, S, Shibata, K, Univ of Tokyo, Japan

Visualization of Shipping Water on Running Ship Foredeck in Regular Head Seas : 2nd Report
Tanizawa, K, Sawada, H, Hoshino, K, Tsujimoto, M, Leconte, N P, National Maritime Research Inst, Japan

Wave Slamming on Vertical Surface-piercing Cylinders: The Role of Nonlinear Wave Scattering
Sheikh, R, Nobel Denton Europe ; Swan, C, Imperial College London, UK

Breaking Wave Impinging and Greenwater on a Two-dimensional Offshore Structure
Chang, K A, Ryu, Y, Texas A&M Univ, USA

Nonlinear Transient Analysis of VLCCs' Bow against Bow Slamming Load
Shin, C H, Do, H M, Korean Register of Shipping ; Kim, M S, Yoo, H K, Daewoo Shipbuilding & Marine Engineering, Korea

The Effect of a Bow Flare Shape on the Water Impact Pressure
Ogawa, Y, National Maritime Research Inst ; Matsunami, R, Nippon Kaiji Kyokai ; Arai, M, Yokohama National Univ, Japan

THURSDAY 14:30

85. Jack-up and Jacket Structures (V. 1)

Thursday June 23 14:30 310BC

Chair: Huang, T, Univ. of Texas at Arlington, USA
Co-Chair: Kawano, K, Kagoshima Univ., Japan

Effects of Current Induced Static Response on Total Response of Offshore Structures Subjected to Wave and Current
Taniguchi, T, Tottori Univ; Kawano, K, Kagoshima Univ, Japan

Scour around Spudcans – Analysis of Measurements
Rudolph, D, Bijlsma, A C, Bos, K, WL-Delft Hydraulics, The Netherlands

Torsionally Coupled Resonse control of Offshore Platform Structures Using CTLCD
Huo, L S, Li, H N, Dalian Univ of Tech, China

Analysis of Jacking Procedure Control for Jack-up Rigs during Site Installation
Tan, X M, Lu, C, Inst of High Performance Computing, Singapore

86. HYDRO XI: Dynamics & Forces 2 (V. 3)

Thursday June 23 14:30 311BC

Chair: Teigen, P, Statoil, Norway
Co-Chair: Ikeda, Y, Osaka Prefecture Univ, Japan

Fishtailing Instabilities in Emergency Towing of Disabled Tankers
Varyani, K S, Barltrop, N, Pham, X P, Univ of Glasgow and Strathclyde, UK

Wave-induced Motions of a Body Floating in a Two-layer Fluid
Kashiwagi, M, Ksyuhu Univ, Japan

Long-term Response of a Heavy Lift Barge
McDougall, L C, MacSween, J A, Henry Abram & Sons; Varyani, K S, Das, P K, Univ of Glasgow and Strathclyde, UK

Influence of the Wave Drift Damping on the Response of Moored Floating Structures
Ormberg, H, Marintek; Astrup, O C, DNV Software, Korea; Finne, S, DNV Software, Norway

Ship Motion Analyses in Compact Wave Basin with Absorbing Wave Maker
Naito, S, Minoura, M, Osaka Univ; Okuyama, E, Akishima Labs (Mitsui Zosen); Takeda, M, Osaka Univ, Japan

Viscous Damping of Vessels Moored in Close Proximity of Another Object
De Boer, G, Buchner, B, MARIN, The Netherlands

Heave, Roll and Pitch Damping of a Deepwater CLAM Buoy with a Skirt
Cozijn, H, MARIN; Uittenbogaard, R, ter Brake, E, Bluewater Energy Services, The Netherlands

Motion Response of a Spread Moored Barge over a Sloping Bottom
Teigen, P, Statoil, Norway

Development of Automatic Position Adjustable Elevator for Workboat
Nakamura, M, Kajiwara, H, Kyushu Univ, Japan

Hybrid Coupled and Decoupled Methodologies for Floating System Motion Analysis
Senra, S F, Petrobras; Jacob, B P, COPPE/UFRJ; Mourelle, M M, Torres, A L F L, Petrobras, Brazil

87. GEOTECH XIII: Seabed and Slope (V. 2)

Thursday June 23 14:30 320BC

Chair : Fakharian, K, Amirkabir Univ of Technology, Iran

GeoRisk3D – System of Simulation, Visualization and Monitoring in Unstable Areas
Santos, R C, Univ of Cidade; Cunha, G G, COPPE/UFRJ, Brazil

Estimation of Bearing Layer by Using AT-value in the Bored Pre-cast Pile Method
Shimizu, M, Aoi Engineering; Hayakawa, K, Nabeshima, Y, Kani, Y, Osaka Univ, Japan

Visual Assessment of Bayed Beach Stability
Lee, T L, Chen, B R, Yang, J T, Leader Univ, Taiwan, China; Jeng, D S, Univ of Sydney; Brook, A, Griffith Univ, Australia

Investigations by Using GPS/GIS/RS Technology on the Slope Stability of Kaohsiung Communities on Slopeland in Taiwan
Tsai, K J, Yu, S H, National Pingtung Univ of Science & Tech; Hsiao, C P, Ho, M C, Chen, C C, Ministry of the Interior, Taiwan, China

Slope Failures in the Ali-Shan Highway due to Typhoons and Earthquakes
Lin, H M, Leader Univ; Chang, S K, National Cheng Kung Univ; Fang, S C, Nan-Jeon Inst of Tech; Lee, D H, National Cheng Kung Univ, Taiwan, China

The Characteristic Analysis of Slope Failures along the No. 3 Freeway Passing Soft Rock Region in Taiwan
Tsai, K J, Lin, Y S, National Pingtung Univ of Science & Tech, Taiwan, China

The Influence of Soil Soaking and Seepage to Evaluate the Landslides of Colluviums
Chien, L K, Feng, T S, Chen, C Y, National Taiwan Ocean Univ, Taiwan, China

88. COASTAL ENG VIII: Current & Tide (V. 3)

Thursday June 23 14:30 310A

Chair: Li, Y C, Dalian Univ of Tech, China
Co-Chair: Nakamura, T, Ehime Univ, Japan

Numerical Simulation of Wave-current-structure Interactions
Li, T Q, Troch, P, De Rouck, J, Ghent Univ, Belgium

Temporal Variability of Residual Current at the Head of Ariake Bay
Hamada, T, Kyozuka, Y, Kyushu Univ, Japan

Characterisation of Subsurface Jet Currents Offshore West Africa
Jeans, G, Fugro GEOS, UK; Cooper, C, ChevronTexaco Energy Tech, USA

Ocean Circulation at Yokogan-sone Seamount
Oikawa, M, Kyozuka, Y, Kyushu Univ; Yamawaki, N, Yoshimura, H, Morii, Y, Murao, A, Nagasaki Univ, Japan

Formation and Development of Gravity Current Advancing in a Long Channel
Katsuragi, T, Kan, S, Baba, N, Kitaura, K, Osaka Prefecture Univ, Japan

Decrease in Tide and Tidal Current in the Ariake Bay
Kyozuka, Y, Kyushu Univ; Fujiwara, T, Mitsubishi Heavy Industries; Hamada, T, Kyushu Univ, Japan

The Response of Engineering Water Level Calculation to Longterm Sea Level Variation in the Jiaozhou Bay
Zuo, J C, Du, L, Li, P L, Li, L, Chen, Z Y, Ocean Univ of China, China

Basic Research on Operational Troubles for Ships and Harbours Due to Abnormal Tides
Sasa, K, Mizui, S, Hiroshima National College of Maritime Tech; Nagai, T, Port and Airport Research Inst; Hibino, T, Hiroshima Univ, Japan

89. ENVIRONMENT III: Numerical Modeling (V. 1)

Thursday June 23 14:30 311A

Chair: Kyozuka, Y, Kyushu Univ, Japan
Co-Chair: Lalli, F, APAT; Italy

Residual Circulation System and Its Driving Mechanism in the Bohai Sea
Sun, Z C, Liang, S X, Dalian Univ of Tech, China; Nakatsuji, K, Yamanaka, R, Osaka Univ, Japan

Modelling of Tide and Tidal Current in the South-eastern Coastal Waters of Korea
Kim, J K, Yosu National Univ; Kang, T S, Kim, H S, GeoSystem Research Corp; Lee, J S, Pukyong National Univ, Korea

Shallow Water Jets: Barotropic and Baroclinic Features [Oral Presentation Only]
Lalli, F, Falchi, M, APAT; Romano, G P, Univ degli Studi di Roma "La Sapienza", Italy

A Discontinuous Galerkin Finite Element Shallow Water Model in Simulating Tidal Flows
Yu, Z X, Kyozuka, Y, Kyushu Univ, japan

Non-hydrostatic Calculation of Shallow Water Environmental Free Surface Flows
Yoon, B S, Park, C W, Univ of Ulsan, Korea

Numerical Study of the Effect of Surfactant on the Droplet Evolution in Two-liquid System
Cho, Y T, Song, M S, Hongik Univ, Korea

Modeling the Seaweed Bed Ecosystems in a Deep Ocean Water Discharged Area
Otsuka, K, Takakura, K, Osaka Prefecture Univ; Moriyama, T, Abe, Y, Kochi Preffectural Deep Seawater Laboratory, Japan

Simulation of Tidal Fields around a Huge Floating Marina in a Bay Using a 3-D Multi-level Model
Boo, S Y, Korea Naval Academy, Korea

90. HPM VII: Steel, Fabrication & NDE III (V. 4)

Thursday June 23 14:30 320A

Chair: Steel, R J, MegaStir Technologies, USA
Co-Chair: Jang, C D, Seoul National Univ, Korea

A Study on the Deformation Characteristics of Curved Steel Plates due to Line Heating
Lee, J S, Kim, C H, Chung, W S, Univ of Ulsan, Korea

On the automation System for Steel Plate Forming by Line Heating
Lee, J S, Kim, C H, Chung, W S, Univ of Ulsan, Korea

Non-destructive Evaluation of Mechanical Properties Using Instrumented Indentation Techniques: Strength, Fracture Toughness, and Residual Stress
Kim, S H, Lee, J S, Kim, K H, Choi, Y, Kwon, D I, Seoul National Univ, Korea

Analysis of Fatigue Crack Growth in S45C Steel by Acoustic Emission Monitoring
Kim, S J, Kong, Y S, Jung, W T, Pukyong National Univ, Korea

The Fatigue Crack Growth and Fracture Toughness Behavior of RAFs by Using TIG Welding
Yoon, H K, Kim, D H, Dongeui Univ; Park, W J, Gyeongsan National Univ, Korea; Kim, S W, Kohyama, A, Kyoto Univ, Japan

Residual Stress Measurement of Hydroxyapatite Sintered by SPS Processing Method
Yagi, K, Gotoh, M, Kanazawa Univ; Ikoma, T, National Inst for Materials Science; Watanabe, Y, Kanazawa Inst of Tech; Hirose, Y, Kanazawa Univ; Tanaka, J, National Inst for Materials Science, Japan

Residual Stress Generated by Grinding of Fine Grain Rolling Steel
Huang, Z J, Gotoh, M, Kanazawa Univ; Shozu, M, Maizuru National College of Tech; Hirose, Y, Kanazawa Univ, Japan

A Fundamental Study on Residual Stress Measurement of Thin Film Materials Using Synchrotron Radiation
Gotoh, M, Kanazawa Univ; Takago, S, Industrial Research Inst of Ishikawa; Sasaki, T, Kanazawa Univ; Akita, K, Yoshioka, Y, Musashi Inst of Tech; Hirose, Y, Kanazawa Univ, Japan

Development of an Expert System for Successful Welding Duplex Stainless Steel
Wang, H S, Diwan College of Management, Taiwan, China

Prediction Method of Welding Deformation of Curved Block by Equivalent Loading Method
Jang, K B, Park, J G, Cho, S H, Jang, T W, Samsung Heavy Industries, Korea

Analysis of Spot and Line Heating Method for Amending Thin Plate Deformation
Park, J G, Jang, K B, Cho, S H, Jang, T W, Samsung Heavy Industries, Korea

91. OCEAN MINING II (V. 1)

Thursday June 23 14:30 321C

Chair: Yamazaki, T, National Inst of AIST, Japan
Co-Chair: Yoon, C H, Korea Inst of Geoscience and Mineral Resources, Korea

On-land Hydraulic Pumping Experiments of 30 Meters Height Scale
Yoon, C H, Lee, D K, Park, Y C, Kwon, S K, Korea Inst of Geoscience and Mineral Resources, Korea

Experimental Study on Effects of Pipe Inclination in Airlift Water Pumping
Hong, S, Choi, J S, Hong, S W, Korea Res Inst of Ships and Ocean, KORDI, Korea

Design of Decentralized Controller for Deep Seabed Mining System
Yeu, T K, Hong, S, Kim, H W, Choi, J S, Korea Res Inst of Ships and Ocean, KORDI, Korea

Development of an Extended Kalman Filter Algorithm for the Localization of Underwater Mining Vehicles
Won, M C, Cha, H S, Chungnam National Univ; Hong, S, Choi, J S, Kim, H W, Korea Res Inst of Ships and Ocean, KORDI, Korea

Comparative Study on Tracked Vehicle Dynamics for Cicular Maneuvering on Soft Soil
Kim, H W, Hong, S, Choi, J S, Korea Res Inst of Ships and Ocean, KORDI, Korea

Preliminary Design Optimization of Deepsea Ocean Mining Collector for Manganese Nodules
Yoo, J H, Jung, J J, Lee, T H, Hanyang Univ; Hong, S, Kim, H W, Choi, J S, Korea Res Inst of Ships and Ocean, KORDI, Korea

92. ARCTIC & ICE III: Mechanics & Forecasting (V. 1)

Thursady June 23 14:30 304A

Chair: Frederking, R, Canadian Hydraulics Centre, NRC, Canada

Numerical Calculation Model of Sea Freezing in Fishing Port during Winter Season
Kioka, S, Honma, D, Yamamoto, Y, Civil Engineering Research Inst of Hokkaido; Hishida, M, Tokachi Port and Harbor Construction Office, Japan

An Operational Model of Iceberg Drift
Kubat, I, Sayed, M, Canadian Hydraulics Centre, NRC; Stuart, S B, McGill Univ; Carrieres, T, Environment Canada, Canada

Ice Breaking by Electrical Discharge Using Pulsed Power Generator
Ihara, S, Yamabe, C, Saga Univ, Japan

A Simplified 3-Dimensional Ice Ridge Scour Model
Choi, K S, Seo, Y K, Korea Maritime Univ, Korea

Short-wave Radiation and Sea Ice in Baffin Bay
Tang, C C L, Dunlap, E, DeTracey, B, Bedford Inst of Oceanography, Canada

Estimation of Failure Length of Ice Sheet Rubbles
Choi, K S, Lee, J K, Korea Maritime Univ, Korea

Distribution of Ice in the Yellow Sea
Yakunin, L P, Karday, A V, Lukiyanova, N B, Far-Eastern State Technical Univ, Russia

93. WAVE IMPACT II (V. 4)

Thursday June 23 14:30 304B

Chair: Sheikh, R, Nobel Denton Europe ; UK
Co-Chair: Koshizuka, S, Univ of Tokyo, Japan

Wave Response of Rectangular Plates on Shallow Water
Tsubogo, T, Osaka Prefecture Univ, Japan

3-D Simulation of Freely Moving Floating Body by CIP Method
Hu, C H, Kyushu Univ, Japan ; Faltinsen, O, NTNU, Norway ; Kashiwagi, M, Kyushu Univ, Japan

A Study for Whipping Analysis of Ships in Irregular Wave Condition
Park, S W, Rim, C W, Korea Inst of Machinery & Materials ; Cho, I H, Cheju National Univ ; Heo, J H, Daewoo Shipbuilding & Marine Eng ; Kim, Y N, HHIC, Korea

Image Analysis of Wave Collapse Phenomenon near the Bow of Small High-speed Craft
Shin, S J, Yamaguchi, S, Shinkai, A, Kyushu Univ, Japan

Rational Polynomial Aproximation for MIMO Systems Considering Physical Relationships between Measured Variables
Kim, S B, KAIST, Korea; Spencer, B F, Univ of Illinois at Urbana-Champaign, USA; Yun, C B, KAIST, Korea

FRIDAY June 24

Conference Tour and **Technical Visit:** Find inside this program.

Other Optional Tours: Find inside this program; visit Tour desk near the conference registration desk on June 19, Sunday.