The Thirteenth (2018) ISOPE
Pacific-Asia
Offshore Mechanics
Symposium

Final Program
Invited and Peer-reviewed Papers from:
Australia, China, Japan, Korea, Malaysia, Netherlands,
Russia, Singapore, South Africa, Taiwan, UK, USA

Hydrodynamics, CFD, NWT
Coastal Dynamics, CFD
Offshore, Ocean Technology
Wind and Ocean Energy
Arctic, Ice Technology

LNG, Bunkering
EEDI, Green Ship
Underwater Tunnel Bridge
Surface, Subsea, Robotics
Risers, Soil-Pipeline

Organized by:
ISOPE International Organizing Committee (IOC) and Local Organizing Committee (LOC): KRISO, KSOE

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Hosted by:
PACOMS-2018 Jeju Secretariat and LOC
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ISOPE-2019
Honolulu, Hawaii, USA

The 29th (2019) International
Ocean and Polar Engineering Conference

Hilton Hawaiian Village, Honolulu, Hawaii, USA
June 16-21, 2019

Call For Papers

Abstract Deadline: October 20, 2018
A full version on www.isope.org or ask meetings@isope.org.

Abstract Submission (now):
http://www.isope.org/index.php/online-submission/
and Technical Program (in February, 2019) on
www.isope.org; Fax 1-650-254-2038
Welcome to PACOMS-2018 Jeju

We greatly appreciate the excellent responses and help we have received from colleagues around the North America, Oceania, Europe and Asia in the successful organization of the 13th ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-2018), Jeju Island, Korea, October 14-17, 2018. The symposium features 19 sessions of peer-reviewed papers and invited papers from Asia, Oceania, North America and Europe. This year’s focus is on LNG, FLNG, Bunkering, EEDI, Green ship, Underwater Tunnel Bridge, CFD, Offshore and Wind Energy, Offshore and Arctic Technologies.

The purposes of the ISOPE conference are to:
• promote technological progress and activities, international technological transfer and cooperation, and opportunities for engineers to maintain and improve technical competence; and
• provide a timely international forum for technical activities, cooperation, opportunity and fellowship among researchers and engineers, by developing focused session topics with peer-reviewed papers accepted through rigorous review, establishing high international standards for publication and worldwide distribution and promoting regional cooperation among the Pacific/Asian countries.

The International Society of Ocean and Polar Engineers (ISOPE) has already held 59 successful international meetings:
• The Annual ISOPE Conference has been held with the world's largest technical program of its kind with refereed papers since 1992. It started in Edinburgh, 1991, and rotated among Europe, Asia and N. America; most recently in Sapporo, 2018.
• Additional specialty and regional symposia:
  • 1st (1995) Ocean Mining (OMS–95), Tsukuba.
  • 1st (2007) Strain-Based Design, Lisbon.
  • 1st (2010) Arctic Steel, Maui, Hawaii
  • 1st (2012) Tsunami and Safety, Rhodes
  • 1st (2012) Asset Integrity, Rhodes
  • 1st (2013) Hi Mn/ Cryogenic Materials, Anchorage
  • 1st (2016) Underwater Technology, Rhodes
  • 1st (2018) Environment-Assisted Cracking, Sapporo

On behalf of PACOMS Executive Committee, International Organizing Committee and Local Organizing Committee, we would like to express our appreciation to the financial sponsors and welcome participants to the PACOMS-2018 Symposium in Jeju Island, Korea.

Jin S. Chung, Chair and Sa Young Hong, Co-Chair
The 13th ISOPE PACOMS-2018 Symposium
TECHNICAL PROGRAM

PACOMS-2018 Jeju
The Thirteenth (2018) ISOPE
Pacific-Asia
Offshore Mechanics Symposium
Jeju, Korea, October 14-17, 2018

The ISOPE PACOMS-2018 Conference Proceedings with peer-reviewed papers in PDF files will be available on USB drive (606 pp.) — paginated — during the conference and later for worldwide post-conference order from ISOPE: ISBN 978-1-880653-86-9; ISSN 1946-004X.

All ISOPE publications are indexed by Engineering Index , EI Compendex, Google scholar, Scopus, Thomson Scientific and Technical Proceedings (ISTP), and others.

UPDATED SYMPOSIUM PROGRAM WITH SESSION / PAPER LIST:
Updated at
http://www.isope.org/index.php/proceedings/

SUNDAY October 14

All sessions will be held at Ramada Plaza

17:00 – 18:30
On-Site Registration and Badge and Proceedings Pickup

18:30 – 20:00
Welcome Reception

MONDAY October 15

08:00
Chairs and Presenters: Test PPT files
Session Room, 8F

8:00 - 12:30
On-Site Registration and Badge and Proceedings Pickup

8:30
1. OPENING PLENARY SESSION
Tamna Hall, 8F

Chair: Sa Young Hong, KRISO, Korea
Co-chair: Bin Teng, Dalian Univ of Technology, China

Symposium Opening Address

Jin S. Chung, ISOPE, USA

PACOMS-2018 Welcome Address
Suak-Ho Van, President, Korea Research Institute of Ships & Ocean Engineering, Korea

Keynote Address

Developments of Fuel Technologies for Low-Emission from Ships
[Oral presentation]
Sungkon Han, Vice President, Naval & Energy System R&D Institute, DSME, Korea

09:30
Coffee/Tea Break

10:00
2. EEDI, ADDED RESISTANCE
3. OFFSHORE WIND, OCEAN ENERGY I
Tamna, 8F
Halla, 8F

12:20
PACOMS Lunch
Tammora Restaurant, 1F

13:30
4. EEDI, ADDED RESISTANCE
5. OFFSHORE WIND, OCEAN ENERGY
Tamna
Halla

15:30
Coffee/Tea Break
Foyer, 8F

15:50
6. CFD, NWT I
7. LNG BUNKERING I
Tamna
Halla

19:00
PACOMS Executive Committees
The Blue Restaurant, 2F

TUESDAY October 16

08:00
Chairs and Presenters: Test PPT files
Session Room, 8F

08:30
8. INTERNAL, SOLITARY WAVES, TSUNAMI
9. LNG BUNKERING II
Tamna
Halla

10:30
Coffee/Tea Break
Lobby, 8F

10:50
10. WAVE LOADS
Tamna
11. OCEAN TECHNOLOGY I  

12:50  
PACOMS Lunch  
Tammora Restaurant, 1F

14:00  
12. VOTEX-INDUCED-VIBRATIONS: CFD  
Tamma

13. OCEAN TECHNOLOGY II  
Halla

16:00  
Coffee/Tea Break  
Lobby, 8F

16:20  
14. SLOSHING, IMPACT LOAD  
Tamma

15. SURFACE VEHICLE, NAVIGATION  
Halla

19:00-21:00  
PACOMS Banquet  

19:00-21:00  Tuesday  
Tamna Hall, 8F

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**WEDNESDAY October 17**

08:00  
Chairs and Presenters: Test the PPT files  
Session Room

08:30  
16. TUNNEL BRIDGE: Hong Kong–Macau  
Tamma

17. UNDERWATER VEHICLES & CONTROL  
Halla

10:00  
18. ARCTIC SHIPPING, ENVIRONMENT  
Tamma

09:20  
19. SOIL-PIPE INTERACTIOS  
Halla

12:30  
20. SYMPOSIUM CLOSING EVENTS  
Tamna

12:30  
PACOMS Lunch  
Tammora Restaurant, 1F

14:00 – 16:00  
SYMPOSIUM TOUR: Check ISOPE Emails for Reservation  
*Tamna Wind Farm and Yongsu OWC Control Center*

Depart 14:00 – Return to Hotel 16:30  

RSVP  *First-come-first-serve basis*


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Local Symposium LOC Chair
Dr. Sa Young Hong, KRISO, Korea

PACOMS-2018 Symposium
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[ISOPE Logo]
ISOPE PACOMS-2018
Jeju, Korea, October 14–17, 2018

All technical session and function events will take place at Ramada Plaza Jeju, Korea. Onsite registration will commence on Sunday, October 14, 2018. The changes on titles or authors the PACOMS-2018 International Organizing Committee (IOC) received in writing before August 30, 2018 are reflected in this program. Final corrections will be updated in the Symposium Proceedings (ISBN 978-1-880653-86-9, ISSN 1946-004X). Proceedings USB of peer-reviewed papers (606 pp.) in 19 technical sessions will be available from ISOPE during and after the Symposium.

PACOMS Symposium proceedings are indexed by Engineering Index, Ei Compendex, Scopus. Further updates will be posted on www.isope.org.

**ISOPE**

**SUNDAY October 14**

16:00:19:00 Tamna Hall, 8F
On-Site Registration and Badge and Proceedings Pickup

18:30-20:00 Tamna Hall, 8F
Welcome Reception by KRISO

**MONDAY October 15**

1. OPENING/GENERAL SESSION
Mon 15 October 08:30 Tamna Hall, 8F

Chair: Sa Young Hong, KRISO, Korea
Co-Chair: Bin Teng, Dalian University of Technology, China

Symposium Opening Address
Jin S Chung, Symposium Co-chair, ISOPE, Cupertino, USA

PACOMS-2018 Welcome Address
Suak-Ho Van, President, Korea Research Institute of Ships & Ocean Engineering, Korea
KEYNOTE

Developments of Fuel Technologies for Low-Emission from Ships [Oral presentation]
Sungkon Han, Vice President, DSME Naval & Energy System R&D Institute, Korea

09:30
Coffee/Tea Break

2. EEDI, GREEN SHIP TECHNOLOGY I

Monday October 15 10:20 Tamna

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

Numerical Investigation on the Nominal Wake of KVLCC2 Model Ship in Regular Head Waves
Hyun-Woo Shin, Kwang-Jun Paik, Young-Gill Lee, Sang-Hyun Kim, Ju-Han Lee, Inha Univ, Korea

CFD Application for Prediction of Ship Added Resistance in Waves
Byung-Soo Kim, Yonghwan Kim, Seoul National Univ, Korea

Time-Domain Approach for Speed Loss of Ship in Waves
Jae-Hoon Lee, Yonghwan Kim, Seoul National Univ, Korea

Efficiency of PBCF Installed at a Bulk Carrier Using CFD Simulation [Oral presentation]
Dong-Hyun Kim, Gyu-Mok Jeon, Jong-Chun Park, Pusan National Univ; Myung-Soo Shin, KRISO, Korea

Energy Supply of Marine Autonomous Objects from Renewable Energy Sources
Valeriy Viktorovich Knyazhev, Vladimir Vasil’evich Loshchenkov, Inst of Marine Technology Problems, FEB RAS, Russia

3. OFFSHORE WIND, OCEAN ENERGY I

Monday October 15 10:20 Halla

Chair: Keyyong Hong, KRISO, Korea
Co-Chair: Koju Hiraki, Kyushu Inst of Technology, Japan

Aerodynamic Noise Prediction of a Vertical Axis Wind Turbine
Jie Su, Dai Zhou, Zhaolong Han, Yan Bao, Shanghai Jiao Tong Univ, China

Effects of Cover Stones on Seabed Response around a Composite Bucket Foundation of Offshore Wind Turbines under Waves
Jin-Feng Zhang, Tianjin Univ; Bin Deng, Fujian Communications Planning & Design Inst; Lihua Wang, Tong-Qing Chen, Tianjin Univ, China

Simulation Research of the MPPT Control Based on LMMHD Wave Energy Generator
Qinghe Zhang, Aiwu Peng, Yanjiao Liu, Inst of Electrical Engineering, CAS, China

Improvement in Efficiency of Darrieus Turbine by Pitch Variation
Koju Hiraki, Katsuhiro Henzan, Koji Hifumi, Kyushu Inst of Technology, Japan

Studies on the Initial Stability of an Air-cushion Supported Floating Platform for Offshore Wind Turbine
Hongbin Hao, Zhiqun Guo, Kangping Liao, Harbin Engineering Univ; Guochun Xu, Ningbo Univ, China

Dynamic Reliability based Design Optimization of Offshore Wind Turbines Considering Uncertainties
Hezhen Yang, Univ of Glasgow, UK; Xiao Zhang, China Ship Development and Design Center, China; Fei Xiao, Nanyang Technological Univ, Singapore

PACOMS Lunch
Wednesday October 15 12:20 Tammora Restaurant, 1F

4. EEDI, GREEN SHIP TECHNOLOGY I II
Monday October 15 13:30 Tamna

Chair: Sungkon Han, DSME, Korea
Co-Chair: Hezhen Yang, Univ of Glasgow, UK

A Numerical Study to Predict Added Resistance of Ship in Irregular Waves
Seonoh Yoo, Taeyoung Kim, Hyun Joe Kim, Semyun Oh, Dong Yeon Lee, Samsung Heavy Industries, Korea

Estimation of Added Resistance of Ships in Short Oblique Waves
Kyung-Kyu Yang, Beom-Soo Kim, Yonghwan Kim, Seoul National Univ, Korea

Numerical Analysis of Added Resistance in Regular Waves Using Dynamic Overset Grid Scheme
Yoo-Chul Kim, Kwang-Soo Kim, Jin Kim, Yoonsik Kim, Korea Research Inst of Ships and Ocean Engineering, Korea

Experimental and Computational Investigation on Wave Added Resistance for Minimum Propulsion Power of a Suezmax-Class Tanker
Doo-Jin Jung, Jin-Woo Choi, Young-Bum Lee Cheul-Hyun Kim, Daewoo Shipbuilding & Marine Engineering; Min-Guk Seo, Korea Research Inst of Ships and Ocean Engineering, Korea

5. OFFSHORE WIND, OCEAN ENERGY II
Monday October 15 13:30 Halla

Chair: Hyunkyung Shin, Univ of Ulsan, Korea
Co-Chair: Mingsheng Chen, Wuhan Univ of Tech, China

Validation of a Numerical Model for a Small Scale Fixed Multi-Chamber OWC Device
Mohammad Shalby, Paul Walker, University of Technology Sydney, Australia; David G. Dorrell, University of KwaZulu-Natal Durban, South Africa; Ahmed Eltanafi, Univ of Tasmania, Australia

Hydrokinetic Energy Conversion from Flow-induced Vibration of a Circular Cylinder with a Pair of Fins
Hongjun Zhu, Yue Gao, Southwest Petroleum Univ, China
Effects of Aerodynamic Damping on Motion Response of a Floating Offshore Wind Turbine
Youngjae Yu, Hyeonjeong Ahn, Jiyoung Kim, Hyunkyoung Shin, Univ of Ulsan, Korea

A Study on Effects of Breakwater on Performance of OWC
Sewan Park, Kyong-Hwan Kim, Bo Woo Nam, Jeong-Seok Kim, Keyyong Hong, Korea Research Inst of Ships and Ocean Engineering, Korea

Performance Analysis of a V-shaped Semisubmersible Floating Offshore Wind Turbine for Deep Water
Lixian Zhang, Wei Shi, Dalian Univ of Technology, China; Madjid Karimirad, Queen’s Univ of Belfast, UK; Dezhi Ning, Dalian Univ of Technology, China

Sensitivity Analysis of Wave Energy Converters in Short-crested Waves
Liang Sun, Wuhan Univ of Tech, China; Jun Zang, Univ of Bath; Rodney Eatoek Taylor, Univ of Oxford, UK; Paul H. Taylor, Univ of Western Australia, Australia; Mingsheng Chen, Wuhan Univ of Tech, China

15:30
Coffee/Tea Break
Lobby, 8F

6. CFD, NWT I
Monday October 15 15:50 Tamna

Chair: Dong Sheng Jeng, Griffith Univ, Australia
Co-Chair: Jong-Chun Park, Pusan National Univ, Korea

Advanced Fully-Lagrangian Mesh-Free Computational Methods for Hydroelastic Fluid-Structure Interactions in Ocean Engineering
Abbas Khayyer, Hitoshi Gotoh, Kyoto Univ., Japan

Development of a 3D Numerical Viscous Wave Tank
Fengfu Jin, Lixiang Guo, Peng Wei, Zhiguo Zhang, Dakui Feng, Huazhong Univ of Science and Technology, China

Response of a Porous Seabed under Natural Dynamic Loading Using Meshfree Method
Shaung Han, Griffith Univ, Australia; Chia Cheng Tsai, National Kaohsiung Univ of Science and Technology, Taiwan, China; Dong-Sheng Jeng, Griffith Univ, Australia

2-D Mesh-free Simulation for Incompressible and Viscous Flow around Moving Cylinder [Oral presentation]
Seong-Jun Ji, Jong-Chun Park, Pusan National Univ, Korea

Integrated Model for Fluid-soil Interactions around Submerged Breakwaters on a Poro-elastoplastic Seabed with Bragg Effects
L Cui, D-S Jeng, Griffith Univ, Australia

Numerical Analysis of Wave Reflection by Perforated Caisson Breakwater
Xiao Liu, Yong Liu, Ocean Univ of China; Pengzhi Lin, Sichuan Univ, China

Morphological Responses of a Submerged Artificial Sandbar to Irregular Waves
Yue Ma, Cuiping Kuang, Xuejian Han, Tongji Univ; Lixin Gong, Hebei Geological Prospecting Bureau, China

Experimental Investigation on Regular Wave Process through an Artificial Reef
Yue Ma, Cuiping Kuang, Xuejian Han, Tongji Univ; Lei Zhu, Hebei Geological Prospecting Bureau, China

7. LNG, BUNKERING I
Monday October 15 16:50  Halla

Chair: Hong Gun Sung, Korea Research Inst of Ships and Ocean Engineering, Korea
Co-Chair: Young-Sup Lim, Seoul National Univ, Korea

Numerical Study of Evaporation Rate of Liquefied Natural Gas from a Cargo Tank While Transported by LNG Vessels
J.V. Triaskin, St. Petersburg State Univ; V.N. Triaskin, St. Petersburg Marine Technical Univ, Russia

A Study on Effect of Irradiation on the Mechanical Performance of Polyurethane Foam
Tae-Wook Kim, Seul-Kee Kim, Jeong-Hyeon Kim, Jae-Myung Lee, Pusan National Univ, Korea

Evaluation of Compressive Characteristics of Polyurethane Foam in Accordance with the Repeated Impact Loading
Myung-Sung Kim, Jeong-Hyeon Kim, Seul-Kee Kim, Jae-Myung Lee, Pusan National Univ, Korea

Experimental Investigation on Sloshing for Independent Types B Tank of 30K LNG Bunkering Vessel
Chang Seop Kwon, Tae Min Cho, Young Jin Lee, Hyun Joe Kim, Dong Yeon Lee, Samsung Heavy Industries, Korea

Design of FLBT Mooring System and Its Numerical Assessment

Motion Characteristics of a 50-Meter High-speed Catamaran Depending on Sea State and Its Forward Speed
Dong Jin Kim, Kwang Soo Kim, Jin Kim, Korea Research Inst of Ships and Ocean Engineering, Korea

19:00
PACOMS Executive Committee  The Blue Restaurant, 2F

TUESDAY October 16

8. TSUNAMI, INTERNAL & SOLITARY WAVES
Tuesday October 16 08:30  Tamna

Chair: Hua Liu, Shanghai Jiao Tong Univ, China
Co-Chair: Ming-Hung Cheng, National Taiwan Ocean Univ, Taiwan China
Scenarios of Tsunami in the South China Sea by Earthquakes of Source Parameters from Different Scaling Relations
Zhisong Li, Chao An, Hua Liu, Shanghai Jiao Tong Univ, China

Evaluation of Collision Force by Driftwood and Small Boats due to Tsunami
Akihiro Sakamoto, Tetsuya Hiraishi, Nozomu Yoneyama, Kyoto Univ; Koji Kawasaki, Hydro Technology Institute Co, Japan

Numerical Simulations for Current Generation of Constant and Variable Velocity Profiles in Deepwater Ocean Engineering Basin of KRISO
Marco Polo Espinoza Haro Sung-Chul Hwang, Bo Woo Nam, Seok-Kyu Cho, Hong-Gun Sung, Korea Research Inst of Ships and Ocean Engineering, Korea

Generation of Undular Bores in Laboratory by Superimposing Waves
Qian Wang, Yongliu Fang, Hua Liu, Shanghai Jiao Tong Univ, China

Laboratory Study on the Interaction Between Internal and Surface Waves over a Submerged Ridge
Ming-Hung Cheng, National Taiwan Ocean Univ; Chih-Min Hsieh, National Kaohsiung Univ of Sci & Tech; Robert R. Hwang, National Taiwan Ocean Univ; Tai Wen Hsu, National Taiwan Ocean Univ, Taiwan, China

Overtaking and Runup of Double Solitary Waves on Plane Beach
Hua Liu, Wei Wu, Yong Peng, Yongliu Fang, Shanghai Jiao Tong Univ, China

9. LNG, BUNKERING II
Tuesday October 16 08:30 Halla

Chair: J V. Triaskin, St. Petersburg State Univ, Russia
Co-Chair: Young-Myoung Yang, Korea Gas Corp., Korea

Assessment of Environmental Load for FLBT in Multi-body Condition

A Development of a Membrane Type LNG Containment System and Its Technical and Systematic Validation
Seungmin Kwon, Kwang-Jun Park, Haeng-Sung Heo, Seongwoo Park, Byung-Hwa Kim, Jun-Hyung Jung, Joong-Kyoo Kang, Duewoo Shipbuilding and Marine Engineering, Korea

Vibration Mitigation Using Vacuum Breaker at SW Heating Pipeline in FSRU [Oral presentation]
Kwang-Jin Lee, Hyundai Heavy Industries, Korea.

LNG Bunkering Strategy for Korea-China LNG ferry in West Coast of Korea [Oral presentation]
Youngsam Oh, So-Jin Park, Korea Gas Corporation, Korea

10:30
Coffee/Tea Break

13
10. WAVE LOADS

Tuesday October 16 10:30 Tamna

Chair: Abbas Khayyer, Kyoto Univ, Japan
Co-Chair: Bo Woo Nam, KRISO, Korea

Meshfree Model for Wave-Soil-Pipe Interaction
Xiao-Xiao Wang, Griffith Univ, Australia; Chia-Cheng Tsai, National Kaohsiung Univ of Science and Tech, Taiwan, China; Dong-Sheng Jeng, Griffith Univ, Australia

Numerical Study of Wave Loads on High-rise Pile-cap Structures
Xuan Ni, Leiping Xue, Shanghai Jiao Tong Univ, China

Numerical Investigation of Wave-current Loads on a Submerged Plate by HOBEM
Dezhi Ning, Chongwei Zhang, Bin Teng, Dalian Univ of Technology, China

Experimental Investigation of the Interaction of Irregular Waves with a Side by Side Pile Group
Shuxue Liu, Haochen Zhang, Jinxuan Li, Dalian Univ of Technology, China

Experimental Validation of a CFD Model for Inline Force and Bow Wave Height on a Vertical Cylinder Moving in Waves
Ahmed Elhanafi, Jonathan Duffy, Gregor Macfarlane, Jonathan Binns, AMC, Univ of Tasmania; Shannon Joel Keough, Defence Science and Technology Group, Australia

An Investigation on the Performance of a Pusher-Barge System in Regular Waves
Cristobal Santiago Bravo, Univ of Science and Technology; Seok Won Hong, Bo Woo Nam, Korea Inst of Ships and Ocean Engineering, Korea

11. OCEAN TECHNOLOGY I

Tuesday October 16 10:50 Halla

Chair: Fuping Gao, Inst of Mechanics, CAS, China
Co-Chair: Byoung Wan Kim, KRISO, Korea

Machine Learning for Optimised Spectral Fatigue Analysis of Floating Structures
François-Xavier Siréta, Xiasha Huang, DNV GL, Singapore

Experimental and Numerical Analysis of Installation Process Using Dual Floating Crane Vessel
Min Guk Seo, Namwoo Kim, Yoon-Jin Ha, In Bo Park, Bo Woo Nam, Kangsoo Lee, Hong Gun Sung, Korea Research Inst of Ships and Ocean Engineering, Korea

VR Application to Installation Order of Piping System in Narrow Space by Checking Geometric Interference of Neighboring Pipe Structures
Mi Seon Jang, Jong-Ho Nam, Korea Maritime and Ocean Univ, Korea

Comparison of Dynamic Analysis and Model Test for Offshore Installation Operations Considering Various Ocean Environments
Jun-Hyeok Bae, Ju-Hwan Cha, Sol Ha, Mokpo National Univ, Korea
Structural Behavior of High Density Mineral Wool for Offshore Installations under Fires - Part I: Experimental Approach for Material Behavior
Dae Kyeom Park, Jeong Hwan Kim, Yeon Chul Ha, Jung Kwan Seo, Pusan National Univ, Korea

Structural Behavior of High Density Mineral Wool for Offshore Installations under Fires - Part II: Numerical Approach for Structural Behavior
Jeong Hwan Kim, Dae Kyeom Park, Yeon Chul Ha, Jung Kwan Seo, Pusan National Univ, Korea

PACOMS Lunch
Wednesday October 16 12:50 Tammora, 1F

12. VOTEX-INDUCED-VIBRATIONS: CFD
Tuesday October 16 10:50 Tamna
Chair: Decheng Wan, Shanghai Jiao Tong University, China

Dynamic Responses of Two Identical Square Cylinders in Tandem Arrangement in Steady Current
Dan Pang, Guo-qiang Tang, Lin Lu, Dalian Univ of Technology; Rui Gao, Yan-shan Zhu, China Petroleum Bureau, China

Numerical Investigations of Vortex-Induced Vibration of Two-Dimensional Circular Cylinder Experiencing Oscillatory Flows
Di Deng, Zhe Wang, Decheng Wan, Shanghai Jiao Tong Univ, China

Numerical Study of Column Rounded Corner Effects on Vortex-Induced Motions of Semi-Submersibles
Siming Li, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong Univ, China

Comparative Study of Probability Distributions of Riser Responses
Curtis Armstrong, Christopher Dunn, Christopher Chin, AMC, Univ of Tasmania; Yuriy Drobyshevskii, INTECSEA, Australia

13. OCEAN TECHNOLOGY II
Tuesday October 16 14:00 Halla
Chair: Jong Ho Nam, Korea Maritime and Ocean Univ, Korea
Co-Chair: Binbin Li, Bureau Veritas Marine & Offshore, Singapore

Investigation on Long and Short Period Responses of Spread and Turret Systems in Ship-mooring Coupled Behavior
Byoung Wan Kim, Hong Gun Sung, Sa Young Hong, Korea Research Inst of Ships and Ocean Engineering, Korea

Yawing of Internal Turret Moored Floating Body in Response to Multidirectional Irregular Waves
Zhihao Ren, Bin Teng, Dalian Univ of Technology, China

Smart Mooring Monitoring System for Line Break Detection from Motion Sensors
François-Xavier Sireta, Ding Zhang, DNV GL, Singapore

Investigation into Application of Environmental Contours for Analysis of Floating Systems

15
Numerical Analysis on Hand-over Operation between Laying vessel and FPSO with Truncation Modeling
Yong-Ju Kwon, Bo Woo Nam, NamWoo Kim, Sa Young Hong, Korea Research Inst of Ships and Ocean Engineering; Junwoog Cho, Samsung Heavy Industries, Korea

Design a Stable PID controller for Dynamic Positioning in FPSO Vessels
Roberto Carmona R., Young-Shik Kim, Hong Gun Sung, Korea Research Inst of Ships and Ocean Engineering, Korea

16:00
Coffee/Tea Break

14. SLOSHING, IMPACT LOAD
Tuesday October 16 16:20 Tamna

Experimental Investigation of Water Impact on a Disk in Pure and Aerated Water
Yao Hong, Benlong Wang, Hua Liu, Shanghai Jiao Tong Univ, China

Risk Analysis of Submarine Pipeline Subjected to Impact Loads by Anchor
Fengyuan Jiang, Yuliang Zhao, Sheng Dong, Ri Zhang, Ocean Univ of China, China

Analysis of the Impact of Dropped Objects and Trawl Board on Submarine Pipelines Considering Pipe-soil Interaction
Yuliang Zhao, Fengyuan Jiang, Sheng Dong, Ri Zhang, Ocean Univ of China, China

Potential Analysis for Coupling Effect of Ship Motion with Liquid Sloshing [Oral presentation]
Sheng-chao Jiang, Dalian Univ of Technology, China

Experimental Study of Anti-sloshing Foam Layers for FLNG Tanks
Chongwei Zhang, Peng Su, Dezhi Ning, Zhen Wang, Dalian Univ of Tech, China

A Multi-phase WCSPH for a 2D Sloshing phenomenon under the Forced Rolling Excitation in the Rectangular Tank
L. Sun, B.X. Zheng, H.T.Li, Dalian Univ of Tech, C.F. Liu, Dalian Ocean Univ, China

Simulation of Violent Sloshing Flows Using Two-phase Particle Method [Oral presentation]
Sang-Moon Yun, Soh-Myung Chang, Jong-Chan Park, Pusan National Univ, Korea; Abbas Khayyer, Kyoto Univ, Japan
15. SURFACE VEHICLE, NAVIGATION

Chair: Kwang Soo Kim, KRISO, Korea
Co-Chair: Ming-Hung Cheng, National Taiwan Ocean Univ, Taiwan China

Modeling Spatial and Temporal Patterns for Vessel Traffic Traversing Inland Bridge Waters
Yi Liu, Ziyuan Li, Xiaoxia Luo, Wuhan Univ of Tech, China

Numerical Simulations of Ship Stopping Maneuver with Reversing Propeller
Chenguang Sun, Jianhua Wang, Decheng Wan, Shanghai Jiao Tong Univ, China

A NURBS-based Hull Surface Modification Method for Hydrodynamic Optimization
Xiaozhou Qi, Aiqin Miao, Decheng Wan, Shanghai Jiao Tong Univ, China

Experimental and Computational Analysis of Wind Speed Distribution in Shipyard Area
Sang-Hun Lee, Doseo Su Kim, Young-Bum Lee, Daewoo Shipbuilding and Marine Engineering, Korea

Welcome Address:
19:00-21:30 Tuesday …………………Tamna Hall, 8F

16. Underwater Tunnel Bridge: Hong Kong Zhuhai-Macao

Chair: Jin S Chung, ISOPE, USA
Co-Chair: Hong Gun Sung, KRISO, Korea

Hong Kong-Zhuhai-Macao Underwater Tunnel Bridge Project: Introduction
Wei Lin, CCCC HZMB Island and Tunnel Project, China

Improving the Effectiveness of the Injectable Waterstop Used for the Segmented Joint of Immersed Tunnel
Ming Lin, Wei Lin, CCCC HZMB Island and Tunnel Project, China; Joel Van Stee, Trelleborg B.V., Netherlands; Xiaopeng Peng, CCCC HZMB Island and Tunnel Project, China

From Mooring to Mooring: The Critical Issues of Out-docking, Towing and Mooring of Immersed Tunnel Element in Hong Kong-Zhuhai-Macao Bridge Project
Ming Lin, Wei Lin, Weimin Huang, Jinjin Ning, CCCC HZMB Island and Tunnel Project, China

Immersed Tunnel Element Towing Resistance Test in Hong Kong-Zhuhai-Macao Bridge Project
Ming Lin, Wei Lin, Faqiang Su, Jinjin Ning, Xiaodong Wang, CCCC HZMB Island and Tunnel Project, China
17. UNDERWATER VEHICLES & CONTROL
Wednesday October 17 08:30 Halla

Chair: In-Sung Jang, KIOST, Korea
Co-Chair: Ji-Hong Rhee, KIRO, Korea

Dynamic Positioning System Design for Light Work Class ROV URI-L
Kihun Kim, Suk-Min Yoon, Chong-Moo Lee, Korea Research Inst of Ships and Ocean Engineering, Korea

A Propulsion Performance Test of Underwater Construction Robot Light Work ROV URI-L in Circulation Water Channel
Chong-Moo Lee, Kihun Kim, Suk-Min Yoon, Korea Research Inst of Ships and Ocean Engineering, Korea

Active Control Strategy for Trenching Work of Track-based Underwater Construction Robot
Hyogon Kim, Youngho Choi, Jeongwoo Park, Jungwoo Lee, Jongdeuk Lee, Hyou Jin Lee, Korea Inst of Robot and Convergence; Jinho Suh, Pukyoung National Univ, Korea

18. ARCTIC SHIPPING, ENVIRONMENT
Wednesday October 17 10:00 Tamna

Chair: T Hiraishi, Kyoto Univ, Japan
Co-Chair: Vladimir G Tsuprik, Far Eastern Federal Univ, Russia

Model of the Cyclical Fracture of Sea Ice
Vladimir G Tsuprik, Victor G Zanegin, Lev V Kim, Far Eastern Federal Univ, Russia

A New Approach to Ice Load Estimation in Time Domain for Arctic Vessels
Young-Shik Kim, Kuk-Jin Kang, Korea Research Inst of Ships and Ocean Engineering; Jinwhan Kim, Korea Advanced Inst of Science and Technology, Korea

A Study of Ship Voyage Planning in the Northern Sea Route
Seong Yeob Jeong, Kuk Jin Kang, Korea Research Inst of Ships and Ocean Engineering; Hyun-Soo Kim, Inha Technical College; Jung-Joong Kim, Changnarn National Univ; Myung-Il Roh, Seoul National Univ, Korea

Transport and Diffusion of the Oil Spill under the Effect of the Reclamation Project of Bodaozui Island
Zhongyu Xie, Junbiao Zhang, Second Inst of Oceanography, SOA; Yunlin Ni, Wei Chen, Zhejiang Ocean Univ, China

Analysis of Dredging Impact of an Airport Reclamation on Hydrodynamic Environment in a Semi-enclosed Bay with Force Tide
[Proceedings only] Xiaodan Mao, Guojun Hong, Yuchi Hao, National Engineering Research Center of Dredging Technology and Equipment; Cuiping Kuang, Tongji Univ, China

Particle-based Simulation of Ice-breaking around Wedge-shaped Bow
[Oral presentation] Di Ren, Jong-Chun Park, Pusan National Univ, Korea
19. SOIL-PIPE INTERACTIONS

Wednesday October 17 09:20  Hallas

Chair: Fuping Gao, Inst of Mechanics, CAS, China
Co-Chair: Yun-Wook Choo, Kongju National Univ, Korea

Effects of Principal Stress Rotation on Soil Response under Natural Loading
Zhengxu Li, Griffith Univ, Australia; Hongyi Zhao, Hohai Univ; Jianfeng Zhu, Ningbo Univ, China; D-S Jeng, Griffith Univ, Australia

A Marine Soft Soil Modified Cambridge Model and Its Numerical Implementation
Xianghua Lai, Second Inst of Oceanography, SOA; Heng Zhang, Shanghai Water Engineering Design & Research Inst Co; Dong Li, Taojun Hu, Second Inst of Oceanography, SOA; Yayao Wang, Lijun Zhang, State Grid Zhejiang Electric Power Corp; Xunping Yan, State Grid Zhejiang Electric Power, China

Effects of Dynamic Soil Permeability on the Wave-induced Seabed Response
Sheng Wu, Dong-Sheng Jeng, Griffith Univ, Australia

3D Numerical Model for Fluid-seabed Interactions around Pipelines Using OpenFOAM
Zuo Dong Liang, Dong Sheng Jeng, Griffith University, Australia

Study on Cutting Trajectory of the Anchor Chain in Clay
Xinhui Hu, Teng Wang, China Univ of Petroleum-Qingdao, China

A Coupled FE Model for Flow-induced Instability of the Integrated Pipe-soil System
Yu-min Shi, Fu-ping Gao, Inst of Mechanics, CAS; Jun-qin Wang, CNOOC; Kai Xu, Inst of Mechanics, CAS, China

Sliding-rolling Mechanism for Lateral Stability of the Pipeline on a Silty Seabed
Kai Xu, Fu-ping Gao, Wen-gang Qi, Inst of Mechanics, CAS, China

20. CLOSING EVENTS

Wednesday October 17 12:00  Tamna Hall

Chair: Sa Young Hong, KRISO, Korea
Co-Chair: Bin Teng, Dalian University of Technology, China

SYMPOSIUM TOUR: October 17, Wednesday
Yongsoo OWC pilot plant, Tamna offshore wind farm

Bus Departure: 13:50 Meet at Hotel lobby
Return to Hotel at 18:00
Reservation: Use the reservation form from isope-2@isope.org
GENERAL INFORMATION

PLACE AND DATE
Jeju Island, Korea, October 14-17, 2018

All ISOPE-PACOMS-2018 Symposium and Social Events will take place at Ramada Plaza JeJu Hotel, Jeju, Korea, the official Symposium venue.

Ramada Plaza JeJu Hotel: [http://www.ramadajeju.co.kr/](http://www.ramadajeju.co.kr/)
66 Tapdong-ro
Jeju-si, Jeju Island, South Korea

HOTEL RESERVATION BOOKING FORM
For PACOMS-2018 Conference-Booking-Form

SYMPOSIUM REGISTRATION FORM

Welcome Reception
Sunday, Oct. 14, 2018: 17:00 - 18:30, Tamna Hall, 8F

Symposium Banquet
Tuesday, Oct. 16, 2018, 19:00 – 21:00, Tamna Hall, 8F

PARKING: Free parking for the PACOMS-2018 Participants

LANGUAGE
The language for the conference is English. No translation service is arranged.

AIR TRAVEL
Jeju Island is the host city of PACOMS-2018. The venue hotel, one of the Jeju’s signature hotels has 400 guest rooms and suites. This island’s first coastal hotel built right by the ocean is located just 10 minutes away by taxi from the Jeju International Airport and 5 minutes by taxi from the Jeju International Port.

The tourist information on the official website of the Jeju Tourism Organization: [https://ijto.or.kr/english/](https://ijto.or.kr/english/). When you drive you may follow the direction given below.

- From Jeju International Airport to the Conference site (10 minutes)
  * To Yongmun rotary → Hancheon Bridge → Seomun Market → Turn left at Seomun Sageori (four-way intersection) → Go straight to Tapdong-ro Total of 3.8km
- From Jeju International Port (5 minutes)
  * Turn left at Imhang-ro → right side to Yongduam/Tap-dong

JEJU AIRPORT to and from Ramada Plaza JeJu Hotel
Please find the travel information at [http://www.ramadajeju.co.kr/](http://www.ramadajeju.co.kr/)

CURRENCY EXCHANGE, CASH MACHINE, ATM
Pay attention to the exchange rate fluctuation. (US$1 = KRW1120 as of August 7, 2018).

PACOMS-2018 ADVANCE REGISTRATION FEES
(if received before September 11)
REGISTRATION. Use the Advance Registration Form from www.isope.org.

Register directly through ISOPE, California, USA: Fax 1-650-254-2038 or meetings@isope.org. Payment of the registration fees should be made only in US dollars.

DEADLINE for Advance Symposium Registration:
1) May 15, 2018 for one presenter per paper: No cancellation refund granted.
2) September 12, 2018 for others.
Complete and send this Registration Form with correct payment amount in US$. The fee-paid participants will receive confirmation. If received after the deadline, the sender registers on site with a surcharge of US$150. Registration after the deadline below costs additional US$150.

Complete this form with correct amount to reach ISOPE by applicable deadlines. Download your form from:

All persons attending the symposium are required to register, pay the appropriate fee, and get a symposium badge. Registration fees are as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Advance Registration Fee (US $)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author, Co-authors</td>
<td>550</td>
</tr>
<tr>
<td>Session or Symposium Chair, Co-Chair</td>
<td>550</td>
</tr>
<tr>
<td>ISOPE Member</td>
<td>500</td>
</tr>
<tr>
<td>ISOPE member with new application (incl. 2019 membership fee and 1-year journal issues)</td>
<td>640</td>
</tr>
<tr>
<td>Non-Member</td>
<td>700</td>
</tr>
<tr>
<td>Spouses (no additional charge)</td>
<td>Free</td>
</tr>
<tr>
<td>Full-time Student with 2018 ID Card</td>
<td>400</td>
</tr>
<tr>
<td>PACOMS Banquet for the Registered</td>
<td>Free</td>
</tr>
<tr>
<td>PACOMS Banquet (spouse)</td>
<td>Free</td>
</tr>
<tr>
<td>Reserve a Seat for Symposium Tour</td>
<td>Free</td>
</tr>
</tbody>
</table>

* The fee in this table is for the advance-registered participants. The Symposium registration fee includes Reception, PACOMS Banquet, tea breaks, and the symposium proceedings.


REGISTRATION CANCELLATIONS
Request for cancellation of registration by non-authors must be received in writing by September 19, 2018 only will be granted a refund minus US$150 US processing charge.

REGISTRATION BADGE
Registration badges are required for admittance to all the symposium activities, including the reception and banquet.

ON-SITE SYMPOSIUM REGISTRATION
Participants who miss the advance registration may register at the Symposium Registration Desk, but there is US$150 surcharge. The registration desk will be open during the following hours:

Sunday, Oct.14  17:00-18:30
Monday, Oct.15  08:00-18:00
Tuesday, Oct.16  08:00-18:00
Wednesday, Oct.17  08:00-12:00

ISOPE PUBLICATION ORDER
A PACOMS-2018 Symposium Proceedings (USB, ISBN 978-1-880653-86-9, ISSN 1946-004X) is included in the symposium registration fees. A single-volume proceedings in USB (606 pp.) can also be ordered by email, fax or air mail at:

$100 (ISOPE Member $80) plus $30 Express shipping & handling.

ISOPE PUBLICATION can be ordered from ISOPE, 495 North Whisman Road, Suite 300, Mountain View, California 94043-5711, USA: FAX 1-650-254-2038; orders@isope.org. Advance payment is required. MasterCard, VISA, AMEX card, bank wire-transfer or U.S. bank checks in US Dollar payable to ISOPE will be accepted. (Download the ISOPE Publication Order Form from www.isope.org > Orders or email to orders@isope.org for publication order form.)

Individual papers of all ISOPE conference, symposium, journal can be ordered clicking:
https://www.onepetro.org/conferences/ISOPE/ISOPE18 or from www.isope.org

PACOMS-2018 HEADQUARTERS
Ara Hall, 8F

WELCOME RECEPTION
18:30-20:00 Sunday, Oct. 14

PACOMS SYMPOSIUM BANQUET
19:00-21:00 Tuesday, Oct. 16

PPT TEST 08:00 daily Session Rooms
A power-point projector connected to PC (Read Author Information form) and screen is set up during 08:00-17:00 (Oct. 15-17) in the session rooms.

INTERNATIONAL PARTICIPANTS AND VISA APPLICATION
International authors, participants or attendees who need help (except financial) can contact: Dr. Hong Gun Sung, KRISO, PACOMS-2018 Local Secretariat Email: hgsung@kriso.re.kr

Entry Visa to Jeju. See details at the electronic government for foreigners: https://www.hikorea.go.kr/pt/main_en.pt
Details of Visa application may be dependent upon each Embassy of the Republic of Korea at the area of the participant’s residence, while Visa-free for citizens of many countries is allowed in the Jeju Island in case of the direct flight to this island.

PACOMS-2018 Local Secretariat will assist, if the request for invitation letter is received by August 10, 2018.

CLIMATE
The October weather in Jeju Island is very pleasant, temperature ranges 15°C~25°C.

About Jeju Island
please go to https://jito.or.kr/english/
TECHNICAL PROGRAM

PACOMS-2018 Jeju
Jeju, Korea, October 14-17, 2018


Forthcoming ISOPE Meetings

ISOPE-2019 Honolulu

Hilton Hawaiian Village
Honolulu, HI, USA, June 16-21, 2019

Abstract Deadline: October 20, 2018

Online Abstract Submission
http://www.isope.org/index.php/online-submission/
and Technical Program

Call For Papers on www.isope.org

Including additional ISOPE symposia, focus sessions:

AI Digitalization
Arctic Science and Tech Arctic, Cryogenic Materials -
Offshore Wind and Ocean Energy Environment - Remote Sensing Hydrodynamics, CFD NWT ANN Deep-Ocean
Coastal Sloshing- Tsunami Underwater Technology LNG/Bunkering Subsea Pipelines Risers Strain Based Design High-performance Materials (HPM) Asset Integrity
EAC Green Ship Emission Smart Ship ASV, USV

ISOPE-2020 Shanghai
30th International Ocean and Polar Engineering Conference
Shanghai, China, June, 2020

PACOMS-2020 Dalian
14th ISOPE Pacific-Asia Offshore Mechanics Symposium
Dalian, China, October, 2020

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meetings@isope.org; www.isope.org