November 22-25, 2020
Dalian, China

http://www.isope.org/conferences-symposia-and-workshops/

The Fourteenth (2020) ISOPE
Pacific-Asia
Offshore Mechanics Symposium
Online Video/Virtual

Updated
Technical Program

Invited and Peer-reviewed Papers from:
Australia, Singapore, Russia, UK, USA, Japan, Korea,
China
Hydrodynamics, CFD, Offshore Wind Turbine
Coastal Dynamics, CFD Wave Energy Converters
Flow-Induced Vibrations Arctic and Environment
Offshore, Ocean Technology Surface, Underwater Vehicles
Pipeline & Seabed Soil Impact, Risk, Safety

Organized by:
ISOPE International Organizing Committee (IOC) and Local Organizing Committee (LOC): Dalian University of Technology

Sponsored by:
International Society of Offshore and Polar Engineers (ISOPE) with Cooperating organizations: Dalian University of Technology

Hosted by:
PACOMS-2020 Dalian Secretariat and IOC
e-mail: dzning@dlut.edu.cn

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The PACOMS-2020 participants and PACOMS Executive Committee, International Organizing Committee and Local Organizing Committee would like to thank:

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Dalian Symposium

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ISOPE-2021
Rhodes, Greece

Online/Virtual

The 31st (2021) International
Ocean and Polar Engineering Conference

Rhodes (Rodos), Greece
June 20-25, 2021

Call For Papers

Abstract Deadline: November 20, 2020
A full version on www.isope.org or ask meetings@isope.org.

Abstract Submission (now):
http://www.isope.org/online-submission/ and
Technical Program (in March, 2021) on www.isope.org;
meetings@isope.org.
fax 1-650-254-2038
Welcome to PACOMS-2020 Dalian

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 14th ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-2020), Dalian, China, November 22–25, 2020. 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 60 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 Honolulu, 2019.
● Additional specialty and regional symposia:
  ● 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 (2020) Advance Ship Technology, Shanghai

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-2020 Symposium in Dalian, China.

Jin S. Chung, Bin Teng, Dezhi Ning
Co-Chairs, The 14th ISOPE PACOMS-2020 Symposium
TECHNICAL PROGRAM

PACOMS-2020 Dalian
The Fourteenth (2020) ISOPE
Pacific-Asia
Offshore Mechanics Symposium
Dalian, China, November 22-25, 2020

The ISOPE PACOMS-2020 Symposium Proceedings with peer-reviewed papers in PDF files will be available on USB drive (530 pp.) — paginated — during the symposium and later for worldwide post-conference order from ISOPE: ISBN 978-1-880653-83-8; ISSN 1946-004X.

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

UPDATED SYMPOSIUM PROGRAM WITH SESSION / PAPER LIST:
Updated at

http://www.isope.org/conferences-symposia-and-workshops/
http://www.isope.org/proceedings/

SUNDAY November 22

MONDAY November 23

All presentations are online video Presentation format;
Beijing Time Zone

8:30
1. OPENING PLENARY SESSION          Meijing Hall, 3F

10:00
2. COASTAL HYDRODYNAMICS I M
3. OCEAN, WIND ENERGY & ENVIRON I Liangchen, 3F

12:20 Not in 2020
PACOMS Lunch       Blue-Diamond, 1F

13:30
4. COASTAL HYDRODYNAMICS II M
5. OCEAN, WIND ENERGY & ENVIRON II Liangchen, 1F

15:50
6. COASTAL HYDRODYNAMICS III M
7. OCEAN, WIND ENERGY & ENVIRON III Liangchen, 1F
19:00 Not in 2020
PACOMS Executive Committees The Blue Restaurant, 2E

**TUESDAY November 24**

08:30
8. COASTAL HYDRODYNAMICS IV Meijing, 3E
9. OFFSHORE WIND, OCEAN ENERGY, ENVIRON IV

10:50
10. HYDRODYNAMICS I Meijing, 3E
11. OCEAN TECHNOLOGY I Liangchen, 3E

14:00
12. HYDRODYNAMICS II Meijing, 3E
13. OCEAN TECHNOLOGY II Liangchen, 3E

16:20
14. VOTEX-INDUCED-VIBRATIONS. Meijing, 3E
15. SOIL & PIPELINES Liangchen, 3E

**WEDNESDAY November 25**

08:30
16. ARCTIC SHIPPING Meijing, 3E
17. OCEAN VEHICLES I: Navigation, Safety 1 Liangchen, 3E

10:00
18. HYDRODYNAMICS III Meijing, 3E
19. OCEAN VEHICLES II: Navigation, Safety 2 Liangchen, 3E

11:30
20. HYDRODYNAMICS IV Meijing, 3E
21. OCEAN VEHICLES III: Navigation, Safety 3 Liangchen, 3E

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# TECHNICAL PROGRAM

The Fourteenth (2020) ISOPE Pacific-Asia Offshore Mechanics Symposium

PACOMS-2020 Dalian
Dalian, China, November 22-25, 2020

All technical session and function events will take place at Soluxe Heyi Hotel Dalian, Dalian, China. Onsite registration will commence on Sunday, November 22. The changes on titles or authors the PACOMS-2020 International Organizing Committee (IOC) received in writing before September 25, 2020 are reflected in this program. Final corrections will be updated in the Symposium Proceedings (ISBN 978-1-880653-83-8, ISSN 1946-004X). Proceedings USB of peer-reviewed papers (530 pp.) in 21 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

All presentations are online in video format

### SUNDAY November 22

18:30-20:00  Blue Diamond, 1F

Welcome Reception by Dalian University of Technology
[Not in 2020]

Time Zone: Beijing Time

PACOMS 1990 Seoul to 2020 Dalian
Jin S Chung, ISOPE, Cupertino, California, USA

### MONDAY November 23

1. OPENING/GENERAL SESSION

Monday November 23  08:30  Meijing Hall, 3F

Chair: Dezhi Ning, Dalian University of Technology, China

Welcome to ISOPE PACOMS-2020 Dalian
2020 ISOPE PACOMS-Award Presentations
Prof. Yucheng Li presents 2020 ISOPE PACOMS-Award plaques to:
PACOMS-2020 Co-chairs: Prof. Bin Teng and Prof. Dezhi Ning

PACOMS-2020 Keynote Address
Advances in Submerged Floating Tunnel Research
Prof. Huaqing Zhang, Vice President and Chief Engineer, Research Institute for Water Transport Engineering, M.O.T., Tianjin, China
Introduction by Bin Teng, Dalian University of Technology, China

2. COASTAL HYDRODYNAMICS I
Monday November 23 10:00 Meijing Hall 3F
Chair:
P20-123
Experimental Study on Formation and Evolution of Sand Waves under Periodic Flows
Zhipeng Zang, Yuxin Sun, Lingyun Li, Mengyu Wang, Tianjin University, China

P20-128
Responses of Morphological Stability to Tidal Inlet Width of a Shallow Coastal Lagoon
Xin Cong, Cuiping Kuang, Zhichao Dong, Tongji University; Lixin Gong, Huixin Liu, Lei Zhu, The Eighth Geological Brigade of Hebei Geological Prospecting Bureau, China

3. OCEAN, WIND ENERGY & ENVIRONMENT I
Monday November 23 10:00 Liangchen 3F
Chair:
P20-125
Electricity Production Performance of Passive Wave Energy Converters for Offshore Tension Leg Platform
Yang Yu, Zhenmian Li, Jianxing Yu, Lixin Xu, Tianjin University, China

P20-129
Impacts of Artificial Islands on the Hydrodynamics and Migration of Green Algae of Jinmeng Bay in Summer
Dan Wang, Cuiping Kuang, Tongji University; Jie Gu, Shanghai Ocean University; Zhichao Dong, Lulu Yu, Tongji University, China

4. COASTAL HYDRODYNAMICS II
Monday November 23 13:30 Meijing 3E

Chair:
P20-180 Determination of Chloride Diffusion Coefficient of Interfacial Transition Zone in Coastal Concrete Structures Based on Experimental and Numerical Methods
Xue-li Ju, Lin-jian Wu, Ming-wei Liu, Li Guan, Yuan-fei Ma, Chongqing Jiaotong University, China

P20-190 Effects of Biological Characteristics of Flexible Vegetation on Wave Attenuation
Yiran Wang, Sudong Xu, Boyi Xie, Wen Xie, Jia Zhou, Mengxiao Xu, Southeast University, China

P20-177 Numerical Simulation of Flood Disasters in the Zhujiajian Island
Junping Liu, Lulu He, Wei Han, Feifeng Cao, Zhejiang University of Technology; Wei Chen, Zhejiang Ocean University, China

5. OCEAN, WIND ENERGY & ENVIRONMENT II
Monday November 23 13:30 Liangchen 3E

Chair:
P20-253 Transient Response of a Spar-type Floating Offshore Wind Turbine with Fractured Mooring Lines under Stochastic and Freak Wave Scenarios
Yan Li, Tianchang Yin, Xiaoyi Liu, Liqin Liu, Yougang Tang, Tianjin University, China

P20-165 Nonlinear Wave Scattering and Energy Harvesting by a Submerged Fluid-filled Piezoelectric Membrane
Chunrong Liu, Xiamen University of Technology, China

P20-169 Study on Hydrodynamic Efficiency of a Multi-float Wave Energy Converting Device
Wei Peng, Yingnan Zhang, Chang Liu, Hohai University; Renwen Chen, Nanjing University of Aeronautics and Astronautics; Yanjun Liu, Shandong University, China
P20-230
Power Maximising Control of Heaving Point Absorber Wave Energy Converters Using Quadratic Damping Force
Yifeng Gu, Boyin Ding, Nataliia Y. Sergienko, University of Adelaide, Australia

P20-231
Parameter Optimization in Wave Energy Converter by a Differential Evolution Algorithm
Zechen He, Dezhi Ning, Ying Gou, Dalian University of Technology, China

P20-244
Influence of Narrow Gap Wave Resonance on a Dual-Floater System with WECs and Breakwaters
Hengming Zhang, Binzhen Zhou, Harbin Engineering University, China; Jun Zang, University of Bath, UK; Ke Sun, Harbin Engineering University, China

6. COASTAL HYDRODYNAMICS III
Monday November 23 15:50 Meijing 3F

Chair:
P20-161
Application of BIM Technology in the Whole Life Cycle of Waterway Engineering
Chang Ge, Sudong Xu, Yingmeng Zhong, Wen Xie, Guanhong Su, Qiwei Xiong, Southeast University, China

P20-178
Investigations of Wave Spatial Transformation over a Submerged Shoal based on High Order Spectral Method
Jian Hao, Jinxuan Li, Shuxue Liu, Lei Wang, Dalian University of Technology, China

P20-252
Numerical Study on Wave Forces on a Perforated Comb-type Breakwater at Water Levels below the Superstructure
Zhuo Fang, Lu Sun, Transport Planning and Research Institute; Zhipeng Zang, Yinghui Tian, Tianjin University; Rong Wang, Ran Tao, China Harbour Engineering Co, China

7. OFFSHORE WIND, OCEAN ENERGY, ENVIRONMENT III: Wind Turbine
Monday November 23 15:50 Liangchun 3E

Chair:

P20-122
Wind Farm Layout Optimization of Offshore Wind Turbines at Gulf of Maine Using a Gaussian Wake Model
Xiaosen Xu, Florida Institute of Technology, USA; Lin Du, Ningbo University, China

P20-183
Time-Domain Response of a Semi-Submersible Floating Wind Turbine with Trussed Slender Structures
Yingyi Liu, Changhong Hu, Shigeo Yoshida, Kyushu University, Japan

TUESDAY November 24

8. COASTAL HYDRODYNAMICS IV
Tuesday November 24  08:30  Meijing,3E

Chair:
P20-193
Unsupervised-Learning Approach to current Profile Characterisation for Extreme Response Analysis
Jasper Joseph Hunt, Michael Binsar Lubis, Mehrdad Kimiaei, University of Western Australia, Australia

P20-110
Three-dimensional Simulation of Sediment Transport in Tidal Channels in Radial Sand Ridge Sea Area under Gales
Xinggang Wang, Nanjing Hydraulic Research Institute; Wei Xiong, Zhejiang Keepsoft Information&Technology Corp; Chunhui Li, Nanjing University of Information Science & Technology; Xiaoyan Fu, Hohai University, China

P20-194
Profile Evolution Analysis of Gravel Beach
Bin Li, Kezhao Fang, Dalian University of Technology; Jiawen Sun, National Marine Environment Monitoring Center; Zhongbo Liu, Zaijin You, Dalian Maritime University, China

P20-202
Study on the Hydrodynamic Factors on Fujiangsha Waterway of the Yangtze River with the Effect of 12.5m Deep-water Channel Project and Sea Level Rise
Nini Zhang, Kai Yin, Sudong Xu, Yanhua Yang, Southeast University, China

P20-248
MPS-DEM Coupled Method for Fluid-Structure Interaction with Free surface Flows
Fengze Xie, Guanyu Zhang, Decheng Wan, Shanghai Jiao Tong University, China

9. OFFSHORE WIND, OCEAN ENERGY,
ENVIROMENT IV

Tuesday November 24 08:30 Liangchen, 3F

Chair:

P20-210
Investigation of Motions of a Floating Wind Turbine Foundation with Multiple Moonpools
Lei Tan, Tomoki Ikoma, Katsuhide Fujishima, Yasuhiro Aida, Koichi Masuda, Nihon University, Japan

P20-171
Numerical Modelling of Wave Interaction with a Monopile Foundation of a Wind Turbine Combined with a Torus-type Multi-chamber Oscillating Water Column device
Peiwen Cong, Bin Teng, Dalian University of Technology, China; Wei Bai, Manchester Metropolitan University, UK; Dezhi Ning, Dalian University of Technology, China

P20-102
Experimental Study on Hydrodynamic responses of a Semi-submersible Fish Farm
Songchen Yu, Peng Li, Hongde Qin, Zhijing Xu, Harbin Engineering University, China

10. HYDRODYNAMICS I: Waves & CFD

Tuesday November 24 10:20 Meijing 3F

Chair:

P20-107
Effects of Circumferential Location-Defects on the Cloaking Phenomenon in Multiple Truncated Cylinders
Zhigang Zhang, Guanghua He, Shuang Liu, Weihai, Zhengxiao Luan, Weijie Mo, Harbin Institute of Technology, China

P20-137
Wave Loads on the Large Vertical Cylinder with the Conformal Mapping and Series Expansion Method
Huiqu Fan, Quanming Miao, China Ship Scientific Research Center, China; Allan Ross Magee, National University of Singapore, Singapore

P20-220
Numerical Simulations of Flows around a Surface-Piercing Flat Plate
Luyu Chen, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong University, China

P20-160
Numerical Study on the Effect of Incident Wave Period on Wave Force of Vertical Breakwater
Xinyu Han, Meng Ning, Sheng Dong, Ocean University of China, China

11. OCEAN TECHNOLOGY I

Tuesday  November 24  10:50  Meijing 3F

Chair:

P20-150
Influence of Wave-dissipating Platform Construction on the Environment at Shengsi, Zhoushan
Chenhao Mao, Zhejiang Ocean University; Binyu Wang, Guangxi Vocational and Technical College of Communication; Ni Yunlin, Gu Yifan, Zeng Hao, Wei Chen, Zhejiang Ocean University, China

P20-151
Offshore Vibro-flotation with Stone Column under Extreme Wave Condition
Ran Tao, China Harbour Engineering Co; Xiao-tao Hua, Rui-yi Huang, Xian-dao Feng, CCCC Second Harbour Engineering Co, China

P20-152
Numerical Investigation of Wave and SFT Interaction in Time Domain
Ruijia Jin, Ocean University of China; Huqing Zhang, Baolei Geng, Tianjin Research Institute for Water Transportation Engineering, China

P20-198
Harmonic Oscillations Study on Hull Motion and Payload Pendulation of the Offshore Large Crane Vessel
Pin Tang, Xun Meng, Dejiang Li, Ocean University of China, China

12. HYDRODYNAMICS II: Water Entry &Impact

Tuesday  November 24  14:00  Meijing 3F

Chair:

P20-127
Numerical Simulation on the Cavity Dynamics and Multiphase Flow Field Characteristics for Water Entry of Revolution Body
Hui Liu, Bo Zhou, Zhifei Wu, Yaoyu Han, Zongkai Yao, Dalian University of Technology, China

P20-134
Water Entry of a Cone into Calm Water in 3DOFs Free Fall Motion
Bang-Wei Liu, Shi-Li Sun, Hui-Long Ren, Harbin Engineering University, China

P20-147
Hydrodynamic Performance Analysis of Swinging and Rotating Cylinder Based on Magnus Effect
Yu Wang, Yang Han, Yang Liu, Zuo Tian Zhang, Harbin Engineering University, China
P20-174
A Two Dimensional Simulation of the Coupled Motion of Two Side-by-side Ships
Shengtao Chen, Zhouyuan Xu, Dalian Maritime University, China

P20-200
Experimental Analysis of the Effect of Entrapped Air on Liquid Impact
Z.J. Wei, L.M. Shen, X.P. Du, Z.M. Wang, G.J. Zhai, Dalian University of Technology, China

P20-214
Effects of Side Wall and Fluid Viscosity on Near-trapping of Four-cylinder Structure
Chong Ji, Sheng-chao Jiang, Dalian University of Technology, China

13. OCEAN TECHNOLOGY II
Tuesday November 24 14:00 Meijing 3F
Chair:

P20-132
Probabilistic Robustness Assessment for a TLP under Mooring Failure Considering Uncertainties
Yang Yu, Jingyi Wu, Jianxing Yu, Lixin Xu, Shuai Hao, Siyuan Cheng, Tianjin University, China

P20-170
Damage Identification of Mooring Lines Using RBF Neural Network
Tiange Wang, Min Zhang, Ocean University of China; Hao Ji, China Renewable Energy Engineering Institute; Qichen Liao, POWERCHINA Huadong Engineering Corp, China

14. VOTEX-INDUCED-VIBRATIONS.
Tuesday November 24 16:20 Meijing 3F
Chair:

P20-185
Experimental Investigation on Seabed Beating and Vortex-induced Vibration of Flexible Pipeline Span
Hongjun Zhu, Honglei Zhao, Southwest Petroleum University, China

P20-219
Numerical Investigations of VIV of a Flexible Cylinder in Oscillatory Flows by Thick Strip Model
Di Deng, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong University, China

P20-249
Numerical Study of Vortex-Induced Vibrations of a Vertical Tensioned Riser under Different Periods of Platform Motion
Hao Hu, Di Deng, Decheng Wan, Shanghai Jiao Tong University, China

15. SOIL & PIPELINES

Tuesday November 24 16:20 Liangzhou, M.

P20-156
A Study on Feasibility of the Method of Sampling and Cone Penetration Test
Kazuo Tani, Tsuyoshi Ikeya, Daisuke Inazu, Tokyo University of Marine Science and Technology, Japan

P20-176
Effects of Statistical Characteristics for Deep-sea Sediments on Lateral Buckling of HPHT Pipelines
Yu-min Shi, Fuping Gao, Institute of Mechanics, CAS; Jian-tao Liu, You-sheng Zhu, China Oilfield Services Limited, China

P20-251
Numerical Study on Seafloor Liquefaction around a Trenched Pipeline in Random Sea Conditions
Zuodong Liang, Qingdao University of Technology, China; Dong-Sheng Jeng, Griffith University, Australia

16. ARCTIC SHIPPING

WEDNESDAY November 25

16. ARCTIC SHIPPING I

Wednesday November 25 08:30

Chair:

P20-158
Numerical Analysis of the Hydrodynamic Performance for Propeller-Ice-Water Coupling Interaction in the Brash Ice Channel
Liang Li, Dengcheng Liu, Shen Wu, China Ship Scientific Research Center, China

P20-163
Research on Mechanism of Polar Resonance Ice-breaking
Huiling Dai, Jicai Lang, Fuzhen Pang, Yu Wang, Harbin Engineering University, China

P20-235
Hydroelastic Response of Ice Sheet with a Gap
Qingwen Kuang, Chongwei Zhang, Dezhi Ning, Robert Mayon, Dalian University of Technology, China
P20-143  
**Design Value Estimation Based on Hindcast Current Speed in the Barents Sea**  
Zhenkun Liao, Sheng Dong, Zhifeng Wang, Shanshan Tao,  
Ocean University of China, China

P20-206  
**Effect of Ice Load on Towing Cable of Geophysical Exploration Ship**  
Wei Wang, Zhonghao Ren, Gang Ma, Harbin Engineering University; Dongsheng Qiao, Yu Qin, Dalian University of Technology, China

P20-232  
**A Study on Ship Resistance in Ice Floes**  
Yuxin Han, Hongxia Li, Zhiyuan Li, Yi Huang, Shunying Ji,  
Dalian University of Technology, China

P20-245  
**The Numerical Study of the Propeller Performance with Ice Blockage**  
Hu shi-liang, Diao feng, Wu Shen, China Ship Scientific Research Center, China

17. OCEAN VEHICLES I: Navigation, Safety 1:  

Wednesday November 25  08:30  Liangchen, 3F

Chair:

P20-222  
**Wigley Hull Design Optimization Based on Artificial Neural Network and Genetic Algorithm**  
Zhiqiang Liu, Xinwang Liu, Decheng Wan, Shanghai Jiao Tong University, China

P20-189  
**Extreme Value Analysis of Section Load on a Ship in Irregular Waves**  
Hai-Yang Wang, Marine Design and Research Institute of China; Hao Cheng, Shi-Li Sun, Harbin Engineering University; Yi-Mei Xia, Si-Yuan Cai, Marine Design and Research Institute of China, China

P20-221  
**Experimental and Computational Investigations of KCS Wave Breaking with Trim and Sinkage Variation**  
Wentao Wang, Shanghai Jiao Tong University; Gengyao Qiu, China Ship Scientific Research Center; Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

P20-227
Influence of Moonpool on Towing Resistance of Nuclear Power Platform
Yihua Liu, Hongxia Li, Yi Huang, Dalian University of Technology, China

Sensitivity Analysis of Traffic Efficiency in Restricted Waterways Considering Deceleration
Jiahui Huang, Hongbo Wang, Zhiwen Tan, Guangdong Ocean University, China

18. HYDRODYNAMICS III: Metocean

P20-201

Wednesday November 25 10:00 Meijiang 3F

Chair:
P20-126
Trends in the Landfall Locations of Tropical Cyclones in China and Its Association with the Enhancing Western Pacific Warm Pool during Recent Decades
Qun Zhou, Lixin Wei, National Marine Environmental Forecasting Center, China

P20-142
Wind and Wave Simulation during Typhoon Soulik (2013) Based on Different Empirical Typhoon Wind Models and SWAN Wave Model
Yijie Gong, Sheng Dong, Zhifeng Wang, Ocean University of China, China

P20-228
Experimental Investigations on the Flow Field of the Internal Solitary Wave over the Gentle Slope
Shao-dong Wang, Hui Du, Gang Wei, Xin-long Wang, Jun-nan Xu, National University of Defense Technology, China

P20-233
SAR Image Simulation of Internal Waves Generated by Underwater Vehicles under Rough Sea Surface
Xin-long Wang, Gang Wei, Hui Du, Shao-dong Wang, National University of Defense Technology, China

19. OCEAN VEHICLES II: Navigation & Safety 2

Wednesday November 25 10:00 Liangchun 3F

Chair:
P20-224
Analysis of Resonance Characteristics of FSRU and LNG Ship under Side by Side Operation
Wenjun Shen, Hanbao Chen, Yunpeng Jiang, Feng Gao, Tianjin Research Institute for Water Transport Engineering, M.O.T, China

P20-215
Physical Mechanisms of Risk Sources and Classification of Risk Modes for Sea Ice Disasters on Marine Engineering Structures
Ning Xu, Shuai Yuan, Yuxian Ma, National Marine Environmental Monitoring Center; Dayong Zhang, Dalian University of Technology; Yuan Chen, Xueqin Liu, Wenqi Shi, Lina, National Marine Environmental Monitoring Center, China

P20-237
Split-Time Method Validation for Estimation of Probability of Ship Capsizing
Chen Yang, Hongxia Li, Xiaoyu Zhou, Yi Huang, Dalian University of Technology, China

20. HYDRODYNAMICS IV:

Wednesday November 25 Meijing 3F

Chair:

P20-223
Uncertainty Analysis of Ship Model Resistance Tests: without and with Rudder
Weimin Chen, Li Zhang, Jianting Chen, Shanghai Ship and Shipping Research Institute, China

P20-188
Analytical Solution for Wave Reflection by a Horizontal Perforated Plate Wave Absorber Using Quadratic Pressure Drop Condition
Shu-yue He, Yong Liu, Yang Zhao, Ocean University of China, China

P20-211
The Numerical Study of the Layout and Interference of Multi Thruster after the Ship
Shucheng Zhai, Yang Ma, Dengcheng Liu, China Ship Scientific Research Center, China

P20-111
Wave Heading Effects on Gap Resonance with Energy Dissipation
Hui Liang, Kie Hian Chua, Hongchao Wang, Technology Centre for Offshore and Marine, Singapore

P20-247
CFD Study of Free Surface Effects on Flows around a Surface-Piercing Cylinder
Songtao Chen, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong University, China

P20-250
Comparative Study of Trimaran's Resistance Optimization by Potential/Viscous-Flow Methods
Nina Wang, Xinwang Liu, Decheng Wan, Shanghai Jiao Tong University, China

Wednesday November 25 11:30 Liangchen, 3F

Chair:

P20-195
Experimental Research on the Dynamic Characteristics of a Deep-sea Nodule Collector Track
Jun Li, Hongping Tang, Cheng He, Changsha Research Institute of Mining and Metallurgy Co, China

P20-153
Accelerated Erosion Test of Viscoelastic Anticorrosive Coating on Hydraulic Steel structures
Li Qin Zeng, Mingwei Liu, Yuanfei Ma, Chenhao Zhu, Chongqing Jiaotong University, China

P20-133
Hydroelasticity Forecasting Method for Ship Motion and Load under Short-Crested Waves
Hao-yun Tang, Xinxin Wu, Baijun Tian, Dalian Maritime University; Qign Wan, Dalian shipbuilding industry Co, China

P20-226
Maritime Collision Risk Analysis with Geographical Parameters in Busan Harbor
Seung-Gi Gug, Dimantha Harshapriya, Hae-Sang. Jeong, Korea Maritime & Ocean University, Korea

P20-135
Development and Application of a PZT-based Pipeline Structure Damage Detection System
Shi Yan, Jianxin Wu, Xuanan Wang, Shenyang Jianzhu University, China

P20-130
Study on the Influence of Thickness Effect on 3D Crack-tip Plastic Zone Size under Biaxial Loading
Baidong Lin, Jingjie Chen, Yi Huang, Dalian University of Technology, China

P20-218
Numerical Investigation on Hydrodynamics of a Deep Submergence Rescue Vehicle
Cong Ye, Liushuai Cao, Decheng Wan, Shanghai Jiao Tong University, China
GENERAL INFORMATION

PACOMS-2020 Symposium
Virtual/Online Presentation

PLACE AND DATE
Dalian, China, November 22-25, 2020

HOTEL RESERVATION BOOKING FORM
Not for PACOMS-2020 Symposium

SYMPOSIUM REGISTRATION FORM
Download from www.isope.org

Welcome Reception
Not in 2020.

Symposium Banquet
Not in 2020.

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

AIR TRAVEL (not in 2020)
Dalian is the host city of PACOMS-2020. The venue hotel has 200 guest rooms and suites. The hotel is conveniently located just 16 km from Zhoushuizi International Airport and 30 minutes by taxi.

CURRENCY EXCHANGE, CASH MACHINE, ATM
Pay attention to the exchange rate fluctuation. (US$1 = CNY6.80 as of September 1, 2020).

PACOMS-2020 ADVANCE REGISTRATION FEES except non-presenting authors and non-authors (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) Register when submitting the manuscript for review for one presenter per paper: No cancellation refund granted.
2) September 18, 2020 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 tour form from: http://www.isope.org/conferences-symposia-and-workshops/

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></td>
<td>Received before the Deadlines</td>
</tr>
<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, non-author)</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. http://www.isope.org/conferences-symposia-and-workshops/

REGISTRATION CANCELLATIONS
Request for cancellation of registration by non-authors must be received in writing by September 27, 2020 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-2020 Symposium Proceedings (USB, ISBN 978-1-880653-83-8, 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 USB drive shipping & handling.

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 or from www.isope.org

PACOMS-2020 HEADQUARTERS Ara Hall, 8F
18: 30 – 20:00 Sunday November 22

WELCOME RECEPTION Not in 2020 Not in 2020
18:30-20:00 Sunday, November 22 Blue Diamond, 1F

PACOMS SYMPOSIUM BANQUET Not in 2020
19:00-21:00 Tuesday November 24 Blue Diamond, 1F

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 (Nov. 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. Chongwei Zhang, DUT PACOMS-2020 Local Secretariat Email: chongweizhang@dlut.edu.cn

Entry Visa to Dalian. See details at the electronic government for foreigners: http://www.visaforchina.org/
Details of Visa application may be dependent upon each Embassy of the People's Republic of China at the area of the participant's residence.

PACOMS-2020 Local Secretariat (dzning@dlut.edu.cn) will assist, if the request for invitation letter is received by September 10, 2020.

CLIMATE
The November weather in Dalian is a little cool, temperature ranges 4°C~15°C. Overcoat or windbreaker is suggested.

About Dalian
please go to http://en.dl.gov.cn/
TECHNICAL PROGRAM

PACOMS-2020 Dalian
Dalian, China, November 22-25, 2020

Download the Advance Registration Form from
http://www.isope.org/conferences-symposia-and-workshops/
> PACOMS-2020.

Forthcoming ISOPE Meetings

ISOPE-2021 Rhodes

The 31st (2021) International
Ocean and Polar Engineering Conference
Online/Virtual
Rhodes (Rodos), Greece, June 20-25, 2021
Abstract Deadline: November 20, 2020

Online Abstract Submission
http://www.isope.org/online-submission/ and
Technical Program
http://www.isope.org/conferences-symposia-and-workshops/

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 Digital 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-2022 Conference
In-place (face-to-face), Shanghai, June

15th PACOMS-2022 Symposium
To be announced

ISOPE-2023 Conference
Canada, USA or Korea: To be announced

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Offshore and Polar Engineers
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Cupertino, CA 95015-0189, USA
Fax: 1-650-254-2038
meetings@isope.org; www.isope.org