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May 31-June 5, Orlando, Florida, USA

The Thirty-sixth (2026) International

Ocean and Polar Engineering Conference

Including additional ISOPE symposia:

Marine Transport: At-sea H2, NH2 Carrier
HPM, Cryogenic Materials and Design
LNG, LH2, LCO2
Environmentally viable Steel
Machine Learning, AI, Digital, MPT, CFD, …
Hydrodynamics, Coastal Hydrodynamics
Advanced Ship Technology
Underwater Drone, Vehicle, Control
Tsunami & Safety
Polar Sciences & Technology
Under-Ice Drone, Navigation
Renewable Energy & Environment
Sloshing and Heat Transfer
16,000-ft Deep Seabed Test: Ship-Pipe-Buffer-Vehicle
Environment Assisted Cracking
High Performance Materials

ISOPE-2026

Orlando, Florida, USA, May 31-June 5

Technical Program (April 8, 2026)

Refereed papers from 40 countries in 96 technical sessions,
Plenary, Keynote and Focus sessions, Workshops,
Full Program with General Information, Advance Registration & Venue Hotel, Paper List, Reservations, and Updates on
https://www.isope.org/conferences-symposia-and-workshops/
ISOPE-2026 Conference proceedings
ISBN 978-1-880653-72-2; ISSN 1098-6189
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International Society of Offshore and Polar Engineers (ISOPE)
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The 36th Annual ISOPE-2026 Conference
Orlando, Florida, USA

ISOPE - 2026

Orlando, FL, USA, May 31–June 5
Ocean Polar Energy Environment
www.isope.org

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Byoung Wan Kim, Korea
Frank Lim, China
Ivana Kubat, Canada
Ove Gudmestad, Norway
Eva Loukogeorgaki, Greece
Munehiko Minoura, Japan
Decheng Wan, China
Hyun Woo Jin, USA
André Baeten, Germany

Presentations at ISOPE-2025 Seoul
Conference Opening session,
Student Awards Presentation,
Best Student Paper Award

Welcome to the ISOPE-2026 Conference

We greatly appreciate the excellent response that we have received from colleagues around the world in the successful organization of the 36th International Ocean and Polar (Arctic) Engineering Conference (**ISOPE-2026)**, Orlando, Florida, USA May 31 - June 5, 2026. The Conference features **96 technical, invited and workshop** sessions of peer-reviewed papers and keynote presentations from some **40** countries**,** including the ISOPE specialty symposia as a part of the ISOPE-2026 Conference.

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 high-quality papers (in both originality and significance) accepted through peer-review, establishing high international standards for publication and worldwide distribution, and promoting interdisciplinary interaction between academia and industry.

The International Society of Ocean and Polar Engineers (ISOPE) has already held more than 80+ successful international meetings with all peer-reviewed papers:

- 1st (1990) European Offshore Mechanics Symposium (**EUROMS**-90) Trondheim; EUROMS-99 Moscow; EUROMS-2012 Istanbul.
- 1st (1990) Pacific/Asia Offshore Mechanics Symposium (**PACOMS**-90) Seoul; Beijing; Pusan; Daejeon; Vladivostok; Dalian; Bangkok; Busan; Vladivostok; Shanghai; Gold Coast, Jeju Island, Dalian, Chennai.
- Annual **ISOPE** conferences, starting in Edinburgh, 1991, have been held in San Francisco, Singapore, Osaka, The Hague, Los Angeles, Honolulu, Montréal, Brest, Seattle, Stavanger, Kitakyushu, Honolulu, Toulon, Seoul, San Francisco, Lisbon, Vancouver, Osaka, Beijing, Maui, Rhodes, Anchorage, Busan, Hawaii Kona, Rhodes, San Francisco, Sapporo, Ottawa, Rhodes, Seoul. Since 1992, the annual ISOPE conference program has been the world's largest of its kind.
- 1st (1995) ISOPE Ocean Mining & Gas Hydrates Symposium (**OMS**-95; OMGH), Tsukuba; Seoul; Goa; Szczecin; Tsukuba; Changsha; Lisbon; Chennai, Szczecin; Kona, Sapporo, Honolulu, and three Hybrid.
- 1st (1996) International Deep-Ocean Technology (**IDOT**-96) Symposium and Workshop, Los Angeles, 1996; Stavanger, 2001; Beijing, 2009.
- ISOPE **HPM** (High-Performance Materials) Symposium: Started in Honolulu 2003 and expanded every year with emerging topics.
- ISOPE Series of **specialty symposia**: ANGT; SBD; Nanotech; Frontier Energy; Sloshing Dynamics; Renewable Energy/Environment; Tsunami; Arctic; Asset Integrity; High-Mn/Cryogenic Materials; Material Reliability, Collision/Impact, EAC, LH2, Advanced Ship Tech, Smart Ship, AI, NN, CFD, Marine Transport,

On behalf of the Technical Program Committee, it is our pleasure to welcome participants from all over the world to the Annual ISOPE-2026 Conference at Orlando, Florida, USA.

ISOPE-2026 Orlando Conference Technical Program Committee (TPC), and Co-chairs of the ISOPE-2026 Conference

Jin S Chung USA	Eva Loukogeorgaki Greece	Byoung Wan Kim Korea
Munehiko Minoura Japan	André Baeten Germany	Decheng Wan China
Ivana Kubat Canada	Hyun Woo Jin USA	Ove Gudmestad Norway

SUNDAY MAY 31

09:00 ISOPE **Board of Directors** Meeting — **Magnolia, Mezzanine**
10:30 ISOPE **Executive Committee** Meeting — **Magnolia, Mezzanine**
EUROMS and PACOMS Executive Committees
15:00-18:00
CONFERENCE REGISTRATION — **East/West Registration**
17:00-18:00
WELCOME RECEPTION — **Poolside**

Tour Information — **Inquire at Front Desk**

MONDAY JUNE 1

On-Site Registration starts at 07:30 — **East/West Registration**
07:30 Session Chair/Co-chair Briefing — **East/West Registration**

08:30 Conference Opening — **International Ballroom**

Welcome to ISOPE-2026 Orlando
Conference Chair: Jin S Chung

Keynote 1
Operational Insights and Learnings from Suiso Frontier, the First Liquefied Hydrogen (LH2) Carrier
Yukichi Takaoka, HySTRA, Japan

Keynote 2
Achieving High Strength and Exceptional Low Temperature Toughness with Aluminum Alloyed High Manganese Steels [Oral presentation]
HyunWoo Jin, HyunJo Jun, ExxonMobil Technology & Engineering Co., USA

Keynote 3
Deep Seabed Manganese Nodules: Touchdown, Track-keeping Modular Mining System: 16,000-ft Deep Full-scale Test
Jin S Chung, formerly Ocean Minerals Co., USA

10:30
2. HYDRODYNAMICS I: Internal Wave and Wake — Salon I
3. RENEWABLE ENERGY I: Wind Turbine/Wave En 1 — Salon VI
4. AST I: Sea Trial and Communication — Salon II
5. UNDERWATER TECH I: Deep Seabed Sensors — Salon VII
6. OFFSHORE TECH I: Jacket and Jackup Platforms 1 — Salon III
7. SPRU I: Pipeline 1- Structural — Salon VIII
8. DRILLING & COMPLETION — Narcissus
9. GEOTECH I: Soil Properties — Or. Bloss.

14:00
10. HYDRODYNAMICS II: Waves and Simulation — Salon I
11. RENEWABLE ENERGY II: Wind Turbine/Wave En 2 — Salon VI
12. AST II: Ultimate Strength, Green Ship 1 — Salon II
13. UNDERWATER TECH II: AUV/ROV 1 — Salon VII
14. OFFSHORE TECH II: Jacket and Jackup Platform 2 — Salon III
15. SPRU II: Pipeline 2-Internal Flow — Salon VIII
16. GAS HYDRATES — Narcissus
17. GEOTECH II: Anchor Drop and Impact on Pipelines — Or. Bloss.

16:20
18. HYDRODYNAMICS III: Slamming — Salon I
19. RENEWABLE ENERGY III: Wind Turb/Wind En 3 — Salon VI
20. AST III: Ultimate Strength, Green Ship 2 — Salon II
21. UNDERWATER TECH III: AUV/ROV 2 — Salon VII
22. OFFSHORE TECH III: Float-over & Modular Design — Salon III
23. SPRU III: Pipeline 3-Structural — Salon VIII
24. DEEP OCEAN MINING I: Seabed Minerals/Dredging1 — Narcissus
25. GEOTECH III: Foundation — Or. Bloss.

18:30 ISOPE Technical Committee Meetings — Notice on bulletin board

TUESDAY JUNE 2

07:30 Session Chair/Co-chair Briefing — **East/West Registration**

08:00

26. HYDRODYNAMICS IV: Motion	Salon I
27. RENEWABLE ENERGY IV: FOWT	Salon VI
28. AST IV: Special Ships 1	Salon II
29. UNDERWATER TECH IV: AUV/ROV 3	Salon VII
30. OFFSHORE TECH IV: FPSO 1	Salon III
31. SPRU IV: Riser 1-Motion Response, Fatigue	Salon VIII
32. DEEP OCEAN MINING II: Minerals/Dredging 2	Narcissus
33. AST XIII: Fuel, Storage and Propulsion 1	Or. Bloss.

10:30

34. HYDRODYNAMICS V: Motion and Resonance	Salon I
35. RENEWABLE ENERGY V: Workshop	Salon VI
36. AST V: Special Ships 2	Salon II
37. UNDERWATER TECH V: Control	Salon VII
38. OFFSHORE TECH V: FPSO 2	Salon III
39. SPRU V: Pipeline 4-Materials	Salon VIII
40. DEEP OCEAN MINING IIII: Minerals, Dredging 3	Narcissus
41. AST XIV: Fuel, Storage and Propulsion 2	Or. Bloss.

13:00 Tentative: Artemis II Recovery Operations — Salon VI

14:00

42. HYDRODYNAMICS VI: Internal Wave	Salon I
43. TBD	Salon VI
44. AST VI: Coupled Ship-Seabed Maneuver 1	Salon II
45. COASTAL HYDRODYNAMICS I: Found. & Baffles	Salon VII
46. OFFSHORE TECH VI: Ecology	Salon III
47. SPRU VI: Installation, Operation, Monitoring	Salon VIII
48. HPM I: Pipeline and Welding Technologies	Narcissus
49. AST XV: Fuel, Storage and Propulsion 3	Or. Bloss.

16:20

50. HYDRODYNAMICS VII: Typhoon	Salon I
51. OFFSHORE TECH VII: Workshop	Salon VI
52. AST VII: Coupled Ship-Seabed Maneuver 2	Salon II
53. UNDERWATER TECH VI: Workshop	Salon VII
54. MECHANICS & MATERIALS I: Matls. & Buckling 1	Salon III
55. SPRU VII: Riser 2-Flexibles	Salon VIII
56. HPM II: Materials & Technologies for Cryogenic	Narcissus
57. AST XVI: Fuel, Storage and Propulsion 4	Or. Bloss.

19:30 ISOPE-*2026/2027* Joint TPC Meeting — **TBA at Registration desk**

Find Digital Conference Program Updates in https://www.isope.org/conferences-symposia-and-workshops/

WEDNESDAY JUNE 3

07:30 Session Chair/Co-chair Briefing — **East/West Registration**

08:00

58. HYDRODYNAMICS VIII: Flow Simulation	Salon I
59. POLAR TECH I: Ice Mechanics	Salon VI
60. AST VIII: Ship Hull Design and Building 1	Salon II
61. COASTAL HYDRODYNAMICS III: Beach	Salon VII
62. MECHANICS & MATERIALS II: Matls., Buckling 2	Salon III
63. SPRU VIII: Subsea System, Soil/Sea Interaction	Salon VIII
64. HPM III: Fatigue and Fracture Mechanics	Narcissus
65. AST XVII: Fuel, Storage and Propulsion 5	Or. Bloss.

10:30

66. HYDRODYNAMICS IX: Acoustic, Low Mach No.	Salon I
67. POLAR TECH II: Arctic Operation 1	Salon VI
68. AST IX: Ship Hull Design and Building 2	Salon II
69. **COASTAL HYDRODYNAMICS IV**: Tidal 1	Salon VII
70. MECHANICS & MATERIALS III: Risk, Reliability	Salon III
71. SPRU IX: Workshop	Salon VIII
72. HPM IV: Concrete and Offshore Structures	Narcissus
73. AST XVIII: Fuel, Storage and Propulsion 6	Or. Bloss.

12:00 ISOPE Board of Directors Meeting II — Magnolia, Mezzanine

14:00

74. HYDRODYNAMICS X: Launch and Positioning	Salon I
75. POLAR TECH III: Arctic Operation 2	Salon VI
76. AST X: Ship Hull Design and Building 3	Salon II
77. COASTAL HYDRODYNAMICS V: Tidal 2	Salon VII
78. MECHANICS & MATERIALS IV: Impact, Collision	Salon III
79. TBD	Salon VIII
80. HPM V: EAC	Narcissus
81. TBD	Or. Bloss.

16:20

82. HYDRODYNAMICS XI: LH2 Sloshing, Heat Transfer	Salon I
83. POLAR TECH IV: Arctic Ocean and Under-Ice Drone	Salon VI
84. AST XI: Green Operation 1: AI, Machine Learning 1	Salon II
85. COASTAL HYDRODYNAMICS VI: Breakwater	Salon VII
86. TBD	Salon III
87. TBD	Salon VIII
88. HPM V: EAC (Continued from 14:00)	Narcissus
89. TBD	Or. Bloss.

19:00 — **International Ballroom**

Annual Conference Banquet

36th ISOPE Cultural Event, Best Paper, Best Student Paper, Outstanding Student Scholarships, Best Organizer(s), Chung Award and ISOPE Awards

Welcome to ISOPE-2027 Osaka

Don't forget the banquet ticket.

THURSDAY JUNE 4

07:30 Session Chair/Co-chair Briefing — **East/West Registration**

08:00

90. HYDRODYNAMICS XII: VIV	Salon I
91. POLAR TECH V: Workshop	Salon VI
92. AST XII: Green Operation II: AI, Machine Learning 2	Salon II
93. COASTAL HYDRODYNAMICS VII: Workshop	Salon VII
94. HPM VI: Workshop	Narcissus

10:30

95. HYDRODYNAMICS XIII: Workshop	Salon I
96. AST XIX: Workshop	Salon II

FRIDAY JUNE 5

No sessions for 2026

Sunday – Thursday	
Author Practice	**Individual session rooms**
On-site Registration	**East/West Registration**
ISOPE Headquarters	**Grand Office**
Conference Proc Pickup	**East/West Registration**
Committee Meetings	**Magnolia, Mezzanine**

TECHNICAL PROGRAM

ISOPE-2026 Orlando, Florida

The Thirty-sixth (2026) International Ocean and Polar Engineering Conference

Orlando, Florida, USA, May 31-June 5, 2026

This 36th annual conference features 95 technical and opening general sessions, plenary and 3 keynote presentations from top experts from industry, academia and government. After peer review of the manuscripts selected from **630+** abstracts, some **370+** peer-reviewed papers will be presented and discussed by researchers, engineers, and managers from more than 40+ countries.

The ISOPE-2026 Conference Proceedings with peer-reviewed papers in PDF files will be available on USB **3,000** pp est.) — paginated during the conference and later for worldwide post-conference mail order from ISOPE: ISBN 978-1-880653-72-2; ISSN 1098-6189.

Only the changes in titles or authors the Technical Program Committee received in writing before April 15, 2026, are reflected in this program.

All ISOPE publications are indexed by Engineering Index, EI Compendex, Google Scholar, Scopus, Scientific and Technical Proceedings (ISTP/ISI), Web of Science and others.

FULL CONFERENCE PROGRAM WITH SESSION / PAPER LIST: any updates at
https://www.isope.org/conferences-symposia-and-workshops/

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Keynote 1

Operational Insights and Learnings from Suiso Frontier, the First Liquefied Hydrogen (LH2) Carrier

Yukichi Takaoka, HySTRA, Japan

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Keynote 3

Deep Seabed Manganese Nodules: Touchdown, Track-keeping Modular Mining System: 16,000-ft Deep Full-scale Test

Jin S Chung, formerly Ocean Minerals Co., USA

SESSION LIST BY TOPICS

OFFSHORE TECHNOLOGY

6. OFFSHORE TECH I: Jacket and Jackup Platform 1
14. OFFSHORE TECH II: Jacket and Jackup Platform 2
22. OFFSHORE TECH III: Float-over and Modular Design
30. OFFSHORE TECH IV: FPSO 1
38. OFFSHORE TECH V: FPSO 2
46. OFFSHORE TECH VI: Ecology
51. OFFSHORE TECH VII: Workshop

DEEP OCEAN MINERALS, MINING AND HYDRATES

8. DRILLING & COMPLETION
16. GAS HYDRATES
24. DEEP OCEAN MINING I: Seabed Minerals/Dredging/Mining 1
32. DEEP OCEAN MINING II: Seabed Minerals/Dredging/Mining 2
40. DEEP OCEAN MINING III: Seabed Minerals/Dredging/Mining 3

RENEWABLE ENERGY (Ocean, Wind)

3. RENEWABLE ENERGY I: Wind Turbine/Wave Energy 1
11. RENEWABLE ENERGY II: Wind Turbine/Wave Energy 2
19. RENEWABLE ENERGY III: Wind Turbine/Wave Energy 3
27. RENEWABLE ENERGY IV: FOWT
35. RENEWABLE ENERGY V: Workshop

GEOTECHNICAL ENGINEERING

9. GEOTECH I: Soil Properties
17. GEOTECH II: Anchor Drop and Impact on Pipelines
25. GEOTECH III: Foundation

SUBSEA, PIPELINES, RISERS AND UMBILICALS (SPRU)

7. SPRU I: Pipeline 1-Structural
15. SPRU II: Pipeline 2-Internal Flow
23. SPRU III: Pipeline 3-Structural
31. SPRU IV: Riser 1-Motion Response, Fatigue
39. SPRU V: Pipeline 4-Materials
47. SPRU VI: Installation, Operation, Monitoring

55. SPRU VII: Riser 2-Flexibles
63. SPRU VIII: Subsea System, Soil/Sea Interaction
71. SPRU IX: Workshop

UNDERWATER TECHNOLOGY

5. UNDERWATER TECH I: Deep Seabed Sensors
13. UNDERWATER TECH II: AUV/ROV 1
21. UNDERWATER TECH III: AUV/ROV 2
29. UNDERWATER TECH IV: AUV/ROV 3
37. UNDERWATER TECH V: Control
53. UNDERWATER TECH VI: Workshop

POLAR TECHNOLOGY

59. POLAR TECH I: Ice Mechanics
67. POLAR TECH II: Arctic Operation 1
75. POLAR TECH III: Arctic Operation 2
83. POLAR TECH IV: Arctic Ocean and Under-Ice Drone
91. POLAR TECH V: Workshop

HYDRODYNAMICS

2. HYDRODYNAMICS I: Internal Wave and Wake
10. HYDRODYNAMICS II: Waves and Simulation
18. HYDRODYNAMICS III: Slamming
26. HYDRODYNAMICS IV: Motion
34. HYDRODYNAMICS V: Motion and Resonance
42. HYDRODYNAMICS VI: Internal Wave
50. HYDRODYNAMICS VII: Typhoon
58. HYDRODYNAMICS VIII: Flow Simulation
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74. HYDRODYNAMICS X: Launch and Positioning
82. HYDRODYNAMICS XI: LH2 Sloshing and Heat Transfer
90. HYDRODYNAMICS XII: VIV
95. HYDRODYNAMICS XIII: Workshop

COASTAL ENGINEERING

45. COASTAL HYDRODYNAMICS I: Foundation and Baffles
61. COASTAL HYDRODYNAMICS III: Beach
69. COASTAL HYDRODYNAMICS IV: Tidal 1
77. COASTAL HYDRODYNAMICS V: Tidal 2
85. COASTAL HYDRODYNAMICS VI: Breakwater
93. COASTAL HYDRODYNAMICS VII : Workshop

HIGH-PERFORMANCE MATERIALS (HPM)

48. HPM I: Pipeline and Welding Technologies
56. HPM II: Materials & Technologies for Cryogenic
64. HPM III: Fatigue and Fracture Mechanics
72. HPM IV: Concrete and Offshore Structures
80. HPM V: EAC
88. HPM V: EAC (continued)
94. HPM VI: Workshop

MECHANICS, IMPACT, COLLISION, RELIABILITY

54. MECHANICS I: Materials and Buckling 1
62. MECHANICS II: Materials and Buckling 2

70. MECHANICS III: Risk, Reliability
78. MECHANICS IV: Impact, Collision

ADVANCED SHIP TECHNOLOGY (AST)

4. AST I: Sea Trial and Communication
12. AST II: Ultimate Strength, Green Ship 1
20. AST III: Ultimate Strength, Green Ship 2
28. AST IV: Special Ships 1
36. AST V: Special Ships 2
44. AST VI: Coupled Ship-Seabed Maneuver 1
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68. AST IX: Ship Hull Design and Building 2
76. AST X: Ship Hull Design and Building 3
84. AST XI: Green Operation I: AI, Machine Learning 1
92. AST XII: Green Operation II: AI, Machine Learning 2
33. AST XIII: Fuel, Storage and Propulsion 1
41. AST XIV: Fuel, Storage and Propulsion 2
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57. AST XVI: Fuel, Storage and Propulsion 4
65. AST XVII: Fuel, Storage and Propulsion 5
73. AST XVIII: Fuel, Storage and Propulsion 6
96. AST XIX: Workshop

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ISOPE room rate effective until May 1 or all rooms booked.

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Engineering Institute of Thailand (EIT)
International Energy Agency – Ocean Energy Systems (IEA-OES)
International Association of Hydraulic Research (IAHR)

ISOPE

SUNDAY 17:00-18:00

Conference Welcome Reception

17:00 **Poolside, Level 1 (L-1)**

MONDAY 08:30

1. OPENING SESSION

Monday June 1 08:30 Int Ballroom

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

Co-Chair: Hyunwoo Jin, Exxon Mobil Technology & Engineering, USA;

Welcome to ISOPE-2026

08:30 Conference Opening Address **International Ballroom**

Jin S. Chung, Conference Chair, ISOPE, USA

Keynote 1

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Keynote 3

Deep Seabed Manganese Nodules: Touchdown, Track-keeping Modular Mining System: 16,000-ft Deep Full-scale Test

Jin S Chung, formerly Ocean Minerals Co., USA

Tea Break

MONDAY 10:30

2. HYDRODYNAMICS I: Internal Wave and Wake

Monday June 1 10:30 Salon I

Chair: Decheng Wan, Shanghai Jiao Tong University, China

Numerical Study of Flow Evolution for Internal Solitary Waves Propagating Over an Underwater Body

Chih-Min Hsieh, National Kaohsiung University of Science and Technology; Ming-Hung Cheng, National Academy of Marine Research; Hsiang-Ying Chen, National Kaohsiung University of Science and Technology; Robert R. Hwang, Tzu-Yi Hung, National Taiwan Ocean University, Taiwan China

Research on Bayesian Optimization for a Hybrid Model Integrating Transformer and BiGRU in Wave Height Prediction
Wen-geng Shen, Yi-ming Zhao, Xue-gang Wang, CCCC Fourth Harbor Engineering Institute Co, China

Kelvin Wake Induced by an Improved Gaussian Pressure Distribution Based on High Order Spectral Method
Pengju Bao, Yuan Zhuang, Decheng Wan, Shanghai Jiao Tong University, China

Comparison Study of Finite-volume and Spectral Element Method on Wall Pressure Fluctuations in Turbulent Channel Flow
Gaoyang Shen, Wenbin Zhang, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong University, China

3. RENEWABLE ENERGY I: Wind Turbine/Wave Energy 1
Monday June 1 10:30 Salon VI
Chair: Jing Jong Jang, National Taiwan Ocean Univ., Taiwan China

Numerical Investigation of Hydrodynamic Loads on Pile Foundations under Focused Waves
Lei Fu, Haoyu Ding, Dezhi Ning, Dalian University of Technology, China

Collaborative Design of Point Absorber Wave Energy Converters Coupling Geometric Optimization and Active Control in Irregular Waves
Donghao Ma, Hao Qin, Chen Xu, Guangqu Jiang, China University of Geosciences, China

Seismic Directionality Effects on Monopile Offshore Wind Turbines
Jing-Jong Jang, Shyh-Rong Kuo, National Taiwan Ocean University, Taiwan China

Deep Reinforcement Learning for Adaptive Control of Point Absorber Wave Energy Converters based on Wave Simulations
Chen Xu, Hao Qin, Donghao Ma, China University of Geosciences; Dawei You, South China Sea Bureau Support Center, Ministry of Natural Resources, China

Mooring Line Tension Prediction of a Floating Offshore Wind Turbine based on the LSTM Neural Network
Qibin Long, Hao Qin, Bo Li, Rui Wang, China University of Geosciences, China

Technical Challenges of Dual Cable Installation for Offshore Wind Farm
Weijie Zhu, Kevin Huang, South China University of Technology, China

Wind and Wave Climate around an Existing Wind Farm. Preliminary Results
Christos Stefanakos, Øyvind Knutsen, SINTEF Ocean, Norway

Analysis and Optimization Design of Cable Parameters between Offshore Floating Wind Farm Arrays
Maolong Wang, Yu Zhang, Siao Jiang, Depeng Liu, China University of Petroleum (Beijing), China

4. AST I: Sea Trial and Communication

Monday June 1 10:30 Salon II
Chair: Yongjun Chen, Bechtel Energy, USA

Benchmarking Study on Wave Forecast Driven Extended Ship Heading Predictions
Wilson Zheng, COMET, Kennedy Space Center; William M. Milewski, Applied Physical Sciences Corp; Wulf V. Eckroth, COMET, Kennedy Space Center; Kevin C. Taylor, NASA Instrumentation Branch, Kennedy Space Center; Valerie J. Vinciullo, Applied Physical Sciences Corp; Victoria M. Miglietta, COMET, Kennedy Space Center, USA

Identification of Dynamic Modal Parameters of a Full-Scale Container Ship During Sea Trials
Ingyu Ahn, HD Hyundai Heavy Industries Co, Korea

Research on Heterogeneous Communication Networking Method for Ship-Shore Collaboration
Dongyang Zhang, Xing Chen, Siyu Tang, Xiyang Liu, Qiong Hu, Zhan Cheng, Xiangyu Chen, Jiajia Yue, China Ship Scientific Research Center, China

Operating Data-Based State Prediction for Ship Engine Monitoring
Min Young Jang, Seong Hyeon Kim, Sun Je Kim, Chungnam National University; Tae Kyung Lee, Bum Hyun Lim, Kyung Won Bae, Samsung Heavy Industries, Korea

Research on Digital Laser Measurement Technology for Stern Tube Hole Coaxiality Based on Easylaser
Dawei Qiang, Changxiao Shi, Shanghai Maritime University; Yun Qu, Shanghai Waigaoqiao Shipbuilding Co; Ji Zeng, Shanghai Maritime University; Kai Wang, BoMing Ren, Yichao Bai, Shanghai Waigaoqiao Shipbuilding Co, China

Research on an Intelligent Inspection Method for Confined Spaces in Cruise Ships Based on Machine Vision
Jiahao Chen, Di Li, Hongtao Chen, Yiting Zhan, Jianguo Chen, Shen Niu, Ji Zeng, Shanghai Maritime University, China

An AI-Driven Intelligent Scheduling System for Passenger Ro-Ro Vessels in the Qiongzhou Strait: Optimization and Application
Zhongjie Di, Jingxian Liu, Wuhan University of Technology, China

Anchorage Capacity Gap Assessment Based on Multi-Agent Simulation
Weikun Yan, Lihan Leng, Jinbao Wang, Yuan Zhao, Chenggang Tang, Jingxian Liu, Wuhan University of Technology, China

5. UNDERWATER TECH I: Deep Seabed Sensors

Monday June 1 10:30 Salon VII
Chair: Shojiro Ishibashi, JAMSTEC, Japan

Data Fusion in Sensor Networks under Transient Impact Conditions: Design and Implementation of Multi-Rate Robust Observers
Siyu Liu, Shenze Chen, Yuanqing Qin, Guohua Xu, Huazhong University of Science and Technology, China

Bi-objective Optimal Speed Scheduling for an Unmanned Photovoltaics-Battery Vessel Considering Battery Capacity Degradation
Wenyang Wang, Li Chen, Shanghai Jiao Tong University, China

Research on Intelligent Link Optimization Methods for Multi-source Information Processing in Deep-Sea Ship-Shore Communication
Chuang Li, Jiajun Lu, Jin Zhu, Liuyan Wang, National Engineering Research Center for Dredging Technology and Equipment, China

6. OFFSHORE TECH I: Jacket and Jackup Platforms 1

Monday June 1 10:30 Salon III
Chair: Bor-Feng Peng, Oil Field Development Engineering, USA

Experimental Investigation of the Wave-induced Motion of Semisubmersible Crane Vessels with Various Hook Methods During Offshore Wind Installation
Kazuhisa Otsubo, Kei Ishida, National Maritime Research Institute; Jun Takano, Yokohama National University, Japan

Numerical Validation of New Recommended SCF Formulae for Tubular Conical Transitions
Bor-Feng Peng, Oil Field Development Engineering; Albert Ku, DNV Renewable Certification, USA

Study on Launching Technology of Jack-up Rigs Constructed on Flat Ground
Bo Zhou, Hankun Yang, Yuchun Du, Wei Chu, Chunhui Li, Yan Yin, Shanghai Waigaoqiao Ship Building Co., China

A Comparative Study of Mesh Strategies in Floating Wind Turbine Dynamics
Pengxu Zou, Chao Sun, Louisiana State University, USA

Flooding and Venting System Innovative Design of Lufeng12-3 Jacket

Yujie Yuan, Yanfang Zhang, Chunhong Hu, Da Shen, Offshore Oil Engineering Co, China

Comparative Study of Frequency-Domain and Time-Domain Analyses for Deep-Water Jacket Platforms
Huaizhou Huang, Yajie Liu, Zhao Liu, Yongming Hu, Offshore Oil Engineering Co, China

Dynamic Response Analysis of Rock-Socketed Jacket-Supported Offshore Wind Turbines
Cun Jiang, East China Electric Power Design Institute Co; Zuojin Zhang, Ocean University of China; Juli Chu, Dangjiu Le, East China Electric Power Design Institute Co; Hui Fang, Ocean University of China, China

7. SPRU I: Pipeline 1 – Structural

Monday June 1 10:30 Salon VIII
Chair: Paul Jukes, 2H Offshore, USA

Residual Curvature Sections in Operation
Nicholas James Vaughan, Hans Olav Heggen, Målfrid Sporsheim, Lucas Sevillano, Martinus Kristiansen Aarmo, DNV, Norway

Symmetric Buckling vs. Antisymmetric Buckling for Subsea Pipeline with Sleeper
Qiang Bai, Yimeng Fan, Zhejiang University, China

Engineering-Constrained Bidirectional LSTM for Structural Integrity Prediction and Optimization of Offshore Jumpers
Chi Yang, Cronus Technology, USA

Learning from Failures and Near Failures in Pipelines [Oral presentation]
A.M. (Nol) Gresnigt, Gresnigt Consultancy, Netherlands

8. DRILLING & COMPLETION

Monday June 1 10:30 Narcissus
Chair: André Baeten, Augsburg Technical Univ Applied Sci, Germany
Co-chair: Yingjie Li, CNPC Tianjin Bo-Xing Eng Sci & Tech Co, China

Potential Analysis of Hydrogen in Cross-Sector Applications with Focus on Mobility
André Baeten, Somayeh Baeten, Augsburg Technical University of Applied Sciences, Germany

Surface Outgassing in Vacuum Chambers: Experimental and Analytical Study
Jaeyoung Jeong, Younghyun Choi, Pohang University of Science and Technology; Junhwan Jeon, Taeyoon Park, Taemin Cho, Samsung Heavy Industries Co; Hangjin Jo, Pohang University of Science and Technology, Korea

Research and Application of Tonnage Control for Slip-Type Casing Head Suspension [Proceedings only]

Zhongtao Yuan, Congfeng,Qu, China National Petroleum Corporation; Zhengqing Ai, Tarim Oilfield Company of Petrochina Co; Guifu Wang, China National Petroleum Corporation, China

From Black Box to Transparency: A Practice of Explainable Methods in Intelligent Drilling Prediction Models
Kun Jiang, Yuanfei Zhang, Jin Yang, Yu Song, Jiakang Wang, Kejin Chen, Shu Jia, Ting Sun, China University of Petroleum (Beijing), China

Study on the Influence of Gas Kick in High Angle Wells on Drilling Engineering Parameters
Xilin Wang, Yonghai Gao, Xinxin Zhao, Shihao Li, Xiaotong Dong, Hongxing Yuan, China University of Petroleum (East China), China

Numerical Investigation on Reservoir Stimulation via High-Voltage Electro-Pulse Pretreatment and Subsequent Hydraulic Fracturing
Xiaotong Dong, Yonghai Gao, Xinxin Zhao, Guizhen Xin, Ziqiang Zhou, Xilin Wang, Hongxing Yuan, China University of Petroleum (East China), China

Study on the Influence of Wax on Hydrate Formation in Water-in-Oil Emulsions
Hongxing Yuan, Yonghai Gao, Xinxin Zhao, Xiaotong Dong, Xin Cao, Shuwei Zhang, China University of Petroleum (East China), China

Research on Sealing Failure of Micro-annulus in Oil and Gas Wells Cement Sheaths
Yingjie Li, CNPC Tianjin Bo-Xing Engineering Science & Technology Co; Kangwei Ao, CNPC Engineering Technology Research Co; Lingxiao Zhao, Shuang Zou, Biao Wang, Jiandong Wang, Lei Yang, CNPC Tianjin Bo-Xing Engineering Science & Technology Co, China

9. GEOTECH I: Soil Properties

Monday June 1 10:30 Orange Blossom

Chair: Misha Liu, Nat'l Eng Research Ctr of Dredging Tech, China

Development of Quality Evaluation Method for Cement-Based Improved Ground by Dynamic Probing and Electrical Logging
Yasutoshi Ohno, Taiyou Kisokogyo Co; Yoshinobu Murata, Gifu University; Kenji Shimosaka, TODA Corporation; Atsushi Yashima, Kazuhide Sawada, Gifu University, Japan

Evaluation of Middle-Depth Mixing for Restored Levees Using FEM and MPM
Hiroshi Yokawa, Yuto Mori, Chubu University; Atsushi Yashima, Gifu University; Toshio Sugii, Chubu University; Kazuhide Sawada, Gifu University, Japan

Health Monitoring of Highway Embankments by Distributed Acoustic Sensing (DAS)
Ueno Shinya, Fujioka Kazuyori, Central Nippon Expressway Co; Yashima Atsushi, Murata Yoshinobu, Gifu University; Yamazaki Mitsuru, Central Nippon Highway Engineering Nagoya Co, Japan

Experimental Study on Flushing of Silty Clay Induced by High-pressure Water Jet [Proceedings only]
Peng Jin, Kang Xie, Jifu Yin, National Engineering Research Center of Dredging, China

MONDAY 14:00

10. HYDRODYNAMICS II: Waves and Simulation

Monday June 1 14:00 Salon I
Chair: Filipe Salvio, Subsea 7, Brazil

Verifications of a New Time-Domain Model for Simulating Wave Diffraction by Vertical Cylinder
Daimeng Shang, Qianyue Chen, Xianlong Lin, Jinghua Wang, The Hong Kong Polytechnic University, China

Application and Validation of Three-Component Wave Parameters for Ship Performance Evaluation in Actual Seas
Takaaki Hanaki, Mariko Kuroda, Akiko Sakurada, Masaru Tsujimoto, National Maritime Research Institute, Japan

Enhancing Safety and Efficiency in Offshore Operations through Probabilistic Wave Forecasts
Bruno Primo, Vortex Mundus; Filipe Salvio, Nicholas Barbosa, Subsea7; Denise Fukai, Vortex Mundus; Fernanda Achete, Federal University of Rio de Janeiro, Brazil

Analysis of Wave Characteristics in the Central Offshore Sea Area of Zhejiang
Rusheng Wang, Hangzhou Guohai Marine Engineering Survey and Design Institute; Junbiao Zhang, Shuqiao Fang, Feng Zhan, Second Institute of Oceanography, China

Experimental Evidence of Wave-trapping over Three-dimensional Geometries in a Wave Tank [Proceedings only]
Qian Wu, The Hong Kong University of Science and Technology; Kang Lu, Southern University of Science and Technology; Rui Xin, The Hong Kong University of Science and Technology; Xingya Feng, Southern University of Science and Technology; Wenbo Gao, Quanke Su, The Hong Kong University of Science and Technology, China

11. RENEWABLE ENERGY II: Wind Turbine/Wave Energy 2

Monday June 1 14:00 Salon VI
Chair: Andrew J. Goupee, University of Maine, USA

Dynamic Response of Four Floating Spar-Type Wind Turbine under Shared Mooring System Failure
Xiaosen Xu, Qian Zhang, Jiangsu University of Science and Technology; Shuaishuai Wang, Ocean University of China; Chao Ren, South China University of Technology; Lin Du, Ningbo University, China; Yihan Xing, University of Stavanger, Norway

Application of Floating Body Motion Analysis to Seawall Mooring Structures
Teppei Omata, Yukinobu Oda, Takahide Honda, Takayuki Hashimoto, Taisei Corporation, Japan

Site Location for a Proposed Offshore Wind Turbine Foundation in Ice Covered Waters for Field Data Collection
Ahmed Derradji-Aouat, NRC Canada, Canada; Jaakko Heinonen, VTT Technical Research Centre of Finland, Finland; Hayo Hendrikse, Delft University of Technology, The Netherlands; Mark Fuglem, C-CORE, Canada; Malith Prasanna, VTT Technical Research Centre of Finland, Finland; Paul Stuckey, C-CORE, Canada

A Reinforcement Learning Approach to Optimize Offshore Wind Turbine Installation Schedules Under Stochastic Weather Conditions
Daniel Rippel, Abderrahim Ait Alla, Stephan Oelker, Michael Lütjen, Michael Freitag, BIBA – Bremer Institut für Produktion und Logistik GmbH at the University of Bremen, Germany

Experimentally-observed Global Motion Performance of a Cruciform-shaped Floating Platform Containing a Motion Mitigation Technology
Christopher K. Allen, Andrew J. Goupee, Richard W. Kimball, Anthony M. Viselli, University of Maine, USA

Effects of Blade Configuration on Wind Load and Start-Up Characteristics of a Floating Cross-Axis Wind Turbine
Hiroaki Eto, Yoshito Fujisawa, Nihon University, Japan

12. AST II: Ultimate Strength, Green Ship 1

Monday June 1 14:00 Salon II
Chair: Naoki Osawa, Univ of Osaka, Japan

Experimental and Numerical Studies on Added Resistance of KVLCC2 in Head Seas Conducted at HOMB
Doojin Jung, Jinwoo Choi, Sunkyu Lee, Jonghun Lee, Intae Kim, Hanwha Ocean Co., Korea

Validation of Kashiwagi's New Formulation of Added Resistance in Waves
Mizuki Yamazaki, Takahito Iida, University of Osaka, Japan

Structural Resistance and Damage Characteristics of Ships in Small-angle Collisions [Proceedings only]

Chang Li, Zisheng Lin, Mengbo Du, Li Guo, Yuchao Yuan, Wenyong Tang, Jun Liu, Shanghai Jiao Tong University, China

Retrofitting a Marine Engine for CO_2 Capture Integration: Design Methodology and Digital Monitoring Framework
Ashok Kumar, Pavlos Loizou, George Mallouppas, Cyprus Marine and Maritime Institute; Theofylaktos Pieri, Meshmade Ltd, Cyprus

Numerical Study on the Effect of Bow Rake Angle on Green Water Phenomena of the KCS Ship
Yuxuan Xu, Shanghai Jiao Tong University; Xi Chen, Ganghui Liu, China Ship Development and Design Center; Yuan Zhuang, Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

13. UNDERWATER TECH II: AUV/ROV 1

Monday June 1 14:00 Salon VII
Chair: Masayoshi Ozawa, Kobe City College of Technology, Japan

Estimation of Coefficients Value for Adhesion-Type Crawling ROVs in Unidirectional Flow
Masayoshi Ozawa, Kobe City College of Technology; Toshiaki Fujimoto, Toshihiko Shimizu, Universal Hands Co, Japan

Numerical Investigation on the Underwater Space Spiral Maneuver of a Generic Submarine
Yuheng Sun, Shanghai Jiao Tong University; Jie Zhu, Wuhan Second Ship Design and Research Institute; Liushuai Cao, Decheng Wan, Shanghai Jiao Tong University, China

Model Predictive Control-Based Control of Deep-Sea Operation ROV
Xiangdi Hua, Fan Yang, Huazhong University of Science and Technology; Liang Zhang, China Ship Development and Design Center; Yuanqing Qin, Guohua Xu, Huazhong University of Science and Technology, China

14. OFFSHORE TECH II: Jacket and Jackup Platforms 2

Monday June 1 14:00 Salon III
Chair: Stephan Lochte-Holtgreven, City Univ Applied Sci Bremen, Germany

Determination of Measurement-based Impact Loads on Boat Landings for Offshore Wind Turbine Substructures
Stephan Lochte-Holtgreven, Felicia Fröhlich, City University of Applied Sciences Bremen; Sigurd Weise, JBO Engineering Group GmbH, Germany

Study on Sliding Installation Technology of Cantilever Beams for Jack-up Drilling Platforms in Dock
Hankun Yang, Bo Zhou, Hongtao Yuan, Yuchun Du, Huan Zhang, Chao Wang, Shanghai Waigaoqiao Shipbuilding Co. Ltd., China

Research on Positioning Technology of Preloading for Jack-up Platform at Quayside
Hankun Yang, Haidong Liu, Gang Chen, Bo Zhou, Yan Wen, Xuan Zhu, Shanghai Waigaoqiao Shipbuilding Co, China

Sensitivity Analysis of the Main Controlling Factors of Extraction Resistance for Jack-up Platforms
Qingying Tang, Jin Yang, Lei Li, Yu Song, Zhigang Li, Chiheng Zhu, Tiancong Cui, China University of Petroleum (Beijing), China

A Method for Correcting the Ultimate Bearing Capacity of Bored Cast-in-place Piles of Offshore Hard Stratum Jacket Structures
Haolin Yang, Jin Yang, Chao Fu, Jiakang Wang, Chiheng Zhu, China University of Petroleum (Beijing), China

Application of a Fast Peridynamics Algorithm to Static and Dynamic Analysis of Offshore Jacket Platforms
Xianchu Yang, Guilin Liu, Ocean University of China, China

Correction Method for the Dynamic Amplification Factor of Deep-Water Jacket Platform Structures under Wave Loads Considering the Nonlinear Pile-Soil Interaction
Bin Du, Zhao Liu, Huaizhou Huang, Xiao Jing, Offshore Oil Engineering Co, China

15. SPRU II: Pipeline 2-Internal Flow

Monday **June 1** **14:00** **Salon VIII**
Chair: A.M. Gresnigt, Gresnigt Consultancy, Netherlands

Mixing Behavior of Hydrogen Blended into Natural Gas Pipelines
Wei Wang, Jing Yang, Qian Xue, Xiaozhe Sun, Ming Yun, Zunzhao Li, Xiaolin Wang, SINOPEC Dalian Research Institute of Petroleum and Petrochemicals Co, China

Coupled Thermo-hydrodynamic Modeling of Gas-Liquid Slug Flow in a Curved Pipe
Zhongheng Lai, Federal University of Rio de Janeiro; Chengbin Liu, Yujin Yuan, Junfeng Zhao, CNPC Brazil Petroleo e Gas Ltda, Brazil; Jian Su, Federal University of Rio de Janeiro, Brazil

Application of Machine Learning in the Calculation of Pressure Drop in Multiphase Pipe Flow
Wenguang Wang, Shanghai Jiao Tong University; Yaji Yang, Yufei Wan, Fengbo Chen, Chenyu Han, CNOOC China Ltd., China

Modeling and Simulation of Gas-Liquid Slug Flow in Offshore Pipelines Using a Two-Fluid Slug Capturing Method
Zhe Zhang, Atila P. S. Freire, Federal University of Rio de Janeiro; Chengbin Liu, China National Petroleum Corporation (CNPC) Brazil Petroleo e Gas Ltda; Jian Su, Federal University of Rio de Janeiro, Brazil

Thermo-hydraulic Analysis of Liquid CO2 Cryogenic Hoses for Offshore Carbon Sequestration
Yufeng Bu, Endao Li, Hao Cheng, Fangqiu Li, CNOOC Gas and Power Group, China

Experimental Study on Hydraulic-Pneumatic Hybrid Conveying Characteristics of Coarse Particles in Vertical Pipelines
Jifu Yin, Jin Xing, Shufeng Cheng, Guojun Hong, Feixin Wang, CCCC National Eng. Research Ctr of Dredging Tech. & Equip, China

16. GAS HYDRATES

Monday June 1 14:00 Narcissus
Chair: Chang Lu, Qingdao University of Technology, China

A Comparative Life Cycle Assessment of CO_2 Emissions from Dual-Fuel LNG Carrier Operating on U.S.-Korea and Australia-Korea Routes
Bokyeong Lee, KeNiT Co; Suhwan Han, Pukyong National University; Daehae Kim, Seoeun Kim, Eunha Gu, Sangwon Lee, KeNiT Co; Jieun Yun, Korea Maritime & Ocean University, Korea

Well Integrity Risks When Encountering Gas Hydrate-Bearing Formation During Deepwater Drilling
Ting Sun, Jin Yang, Laiao Ren, Mingxuan Zhang, Xinyi Wang, China University of Petroleum (Beijing); Kaidie Yang, CNOOC Energy Technology & Services Limited; Xiangyu Zhang, Zhiliang Wen, Shuqun Wang, Haoquan Li, China University of Petroleum (Beijing), China

The Applied Practice of Artificial Intelligence in Offshore Oil Drilling Engineering
Yi Wu, Yinweng Ma, CNOOC Research Institute; Xianzhi Song, China University of Petroleum, Beijing; Baisong Tang, CNOOC; Zhaoyu Pang, CNOOC Research Institute; Zhaopeng Zhu, China University of Petroleum, Beijing; Bingxuan Li, CNOOC Research Institute; Rui Zhang, China University of Petroleum, Beijing; Huaigu Tang, CNOOC Research Institute; Tao Pan, China University of Petroleum, Beijing; Tianwei Zhang, Wei Qin, CNOOC Research Institute, China

Wellbore Control Methods and Insulation Material Development for Hydrate Stability in Deepwater Geothermal Energy Production
Shengda Shen, Yuhuan Bu, China University of Petroleum (East China); Chang Lu, Qingdao University of Technology; Huajie Liu, Shenglai Guo, Mengran Xu, China University of Petroleum (East China), China

Study on Erosion Simulation of Jetting Nozzle for Marine Natural Gas Hydrate Reservoir Stimulation

Xin Zhang, Yingying Tian, Gang Song, Xiaoyang Li, Inst. of Exploration Techniques, CAGS, China

Experimental Study of Loop-reactor pilot-scale CO2 Separation from Simulated Biogas Based on Hydrate Technology [Proceedings only]
Qian Xue, Peixian Wang, Wei Wang, Sinopec (Dalian) Research Inst. of Petroleum & Petrochemicals Ltd. Co., China

17. GEOTECH II: Anchor Drop and Impact on Pipeline
Monday June 1 14:00 Orange Blossom
Chair: Fengjie Yin, 2H Offshore Inc, USA

Numerical Study of Clash Energy of Dropped Object on Pipelines and Risers
Weihua Mo, Guanyu Hu, Fengjie Yin, 2H Offshore Inc, USA

Infrared Thermographic Identification of Tensile Integrity in Coastal Anchoring Structures
Byeong-su Jang, Won-Woo Choi, Hyung-Koo Yoon, Daejeon University, Korea

A Comparative Study of RITSS and CEL Methods in Suction Caisson Penetration Simulation
Weichen Yang, Shuntao Fan,Yajie Liu, Zuoqun Li, Offshore Oil Eng. Co, China

An Automated FE Procedure of Calculating the Penetration Resistance of Suction Piles Installed into Layered Seabed
Xiaoyu Dong, Niantao Zhang, Offshore Oil Engineering Co; Han Yu, Xiaowei Feng, Dalian University of Technology; Fei Zhang, Wei Li, Xiaomei Sun, Offshore Oil Engineering Co, China

MONDAY 16:20

18. HYDRODYNAMICS III: Slamming
Monday June 1 16:20 Salon I
Chair: Wenjun Zhou, MARIC, China

Research on Prediction Method of Optimal Search Area for Man Overboard Under High Sea Conditions
Wei Zhao, Dongmei Su, Shanghai Maritime University; Yihua Liu, Eastern Institute of Technology, China

Novel Soft Ring Technique for Offshore Structure Protection from Wave Slamming Load
Ying Luo, Jiahui Chen, Kevin Huang, South China University of Technology, China

Study on Ship Motions in Waves within Shoal Water Area Based on Nonlinear Time Domain Method

Wenjun Zhou, Marine Design and Research Institute of China; Miao Qi, Meteorological Center of East China Regional Air Traffic Management Bureau of Civil Aviation; Liang Hong, Lufeng Pan, Marine Design and Research Institute of China, China

A Preliminary Calibration of Hydroelastic Parameters for a Discrete-Module-Beam Simulation of an Offshore FPV System Using Experimental Data
Farid Putra Bakti, Audric Hubert Lie, Maria Angelin Naiborhu, Institut Teknologi Bandung, Indonesia; Chungkuk Jin, Florida Institute of Technology, USA; Do Kyun Kim, Seoul National University, Korea; Ahmad Mukhlis Firdaus, Institut Teknologi Bandung, Indonesia

19. RENEWABLE ENERGY III: Wind Turbine/Wave Energy 3
Monday June 1 16:20 Salon VI
Chair: Kilwon Kim, KRISO, Korea

Enhancing WEC Energy Absorption in the Gulf of Mexico Using Sequential Design Optimization
Aghamarshana Meduri, HeonYong Kang, Texas A&M University, USA

Model-To-Model Calibration Based on Model Test Data for a 16MW TLP Floating Offshore Wind Turbine
Yakun Zhao, Shi Deng, Shiyuan Zhang, Shunhang Lu, Chengliang Mao, Offshore Oil Engineering Co, China

Optimization of Weather Routes Based on a Multi-Objective Adaptive Weighted Evolutionary Algorithm
Xiaoxi Zheng, Shanghai Maritime University; Yihua Liu, Eastern Institute of Technology; Xiangyu Wang, Shanghai Maritime University, China

Control Study of Floating Wind Turbine Platform Based on a Gyroscopic Stabilizer
Ping Cheng, Tingyuan Zhang, Wenchuan Zhao, Shanghai Maritime University; Decheng Wan, Shanghai Jiao Tong University, China

Design-Oriented Performance Assessment of a Gyroscopic Flywheel for Floating Offshore Wind Turbine Stabilization
Ping Cheng, Wenchuan Zhao, Tingyuan Zhang, Shanghai Maritime University; Decheng Wan, Shanghai Jiao Tong University, China

Modal Decomposition of Surge-Induced Wake Dynamics in Floating Wind Turbines
Bin Peng, Huaxiao Wu, Sunwei Li, Tsinghua University, China

Performance Evaluation of an OWC Wave Energy Conversion Turbine-Generator System Using a Centrifugal Fan
K.W. Kim, T.K. Ko, J.Y. Park, S.W. Park, J.S. Kim and K.H. Kim, KRISO, Korea

20. AST III: Ultimate Strength, Green Ship 2

Monday June 1 16:20 Salon II

Chair: Young-Moo Son, HD Hyundai Heavy Industries, Korea

A Method for Evaluating the Dynamic Structural Response of Membrane-Type LNG Cargo Containment Systems Considering Hull Structural Stiffness

Min-Kyu Park, Dong-Woo Kim, Yong-Tai Kim, Hoonkyu Oh, Byungki Choi, HD Hyundai Heavy Industries, Korea

A Computational Framework for Automation and Optimization Algorithms for Structural Assessment and Design Development of Pump Tower [Oral presentation]

Young-Moo Son, HD Hyundai Heavy Industries; Dong Woo Kim, Sung Gyu Jeon, Yong Tai Kim, Hoon Kyu Oh, HD Hyundai Maritime Research Institute; Jin-Hyeok Kim, In Chang Yeo, In Su Han, Myung Il Roh, Seoul National University, Korea

Automatic Robotic Welding Program Generation for Ship Double Bottoms

JaeHyeok Cho, GyeongHoon Kang, HyunDo Jung, YeonU Park, NamKug Ku, KyoungRok Son, JunHee Lee, Pukyong National University, Korea

Effects of Orifice Ventilation on Stepped Planing Craft Resistance

Ruixin Dou, JiangTao Qin, Jiabin Bu, Wuhan University of Technology, China

Study on the Characteristics of Air Layer for Air Layer Drag Reduction over a 2D Flat Plate Based on the Euler-Euler Method

Qidi Gao, Shanghai Jiao Tong University; Xiaosong Zhang, China Ship Scientific Research Center; Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

Hydroelastic Response of a Trimaran in Waves Based on CFD-MBD Method

Zhihao Wang, Shanghai Jiao Tong University; Songtao Chen, Haotuo Qu, Yuji Miao, China Ship Scientific Research Center; Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

Wall Shear Stress from a Jetting Bubble Near a Protruding-Cone Boundary

Wentao Wu, Shanghai Jiao Tong University; Chen Niu, Wuhan Second Ship Design and Research Inst.; Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

21. UNDERWATER TECH III: AUV/ROV 2

Monday June 1 16:20 Salon VII

Chair: Shojiro Ishibashi, JAMSTEC, Japan

Suppression of Internal Solitary Wave-Induced Depth Drop in Submarines via PD–PI Autopilot Control

Linjie Li, Shanghai Jiao Tong University; Qingjie Meng, Wuhan Second Ship Design and Research Inst.; Liushuai Cao, Decheng Wan, Shanghai Jiao Tong University, China

Long-range UUV Shape Optimization Driven by Bayesian Optimization Algorithm Coupled with CFD Simulations
Yuhao Gao, Jiancai Zheng, Jixie Huang, Min Zhao, Shanghai Jiao Tong University, China

Highly Adaptative AUV Crawling System for Pipelines and Dynamic Cables Inspection
Liwei Chen, Tingze Huang, Kevin Huang, South China University of Technology, China

Numerical Simulation of Steady Turning Motion of Full Appendage SUBOFF in Horizontal Plane
Hehe Wang, Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

22. OFFSHORE TECH III: Float-over and Modular Design
Monday June 1 16:20 Salon III
Chair: Yongjun Chen, Bechtel Energy, USA

A Practical and Experience-Driven Framework for LNG MOF Design
Matthew Liu, Yongjun Chen, Xin Hai, Sushil Chauhan, Bechtel Energy, Inc., USA

Marine Dolphins and Loading Platform Structures Modularization
Moheb Labib, Xin Hai, Francisco Brenes, Yongjun Chen, Sushil Chauhan, Bechtel Energy, Inc., USA

Numerical Investigation of Energy Dissipation Evolution during Water Column Free Decay between Parallel Boxes Gap in a Confined Space
Shaodong Gong, Lihua Hu, Xinyu Wang, Zhenxiang Xu, Ao Jia, Mingyue Song, Ocean University of China, China

Systematic Investigation of Multi-Vessel Float-Over Operation Dynamics Using an Integrated Numerical Simulation Approach
Zhengqi Heng, Xukai Fang, Shanghai Jiao Tong University; Meng Yuan, Yutu Ye, COSCO SHIPPING Specialized Carriers Co; Boyue Wang, Xinliang Tian, Xin Li, Shanghai Jiao Tong University, China

Sea-State-Driven Machine Learning for Structural Safety Assessment of Multi-Module Floating-Structure Connectors
Peiyuan Chang, Minggang Tang, Xiaofeng Wu, Yuchao Chen, China Ship Scientific Research Center, China

Numerical Analysis of Wave Propagation for a Floating Pier Considering the Synergistic Effect of Multiple Structures [Proceedings only]

Xiong-kai Li, Hong-gao Luo, Qi Wang, CCCC Fourth Harbor Engineering Co, China

23. SPRU III: Pipeline 3-Structural
Monday June 1 16:20 Salon VIII
Chair: Adel Jebali, TechnipFMC, France

Predictive Post-Lay Lateral Buckling Analysis for Ultra-Deepwater Rigid Flowlines Offshore Brazil
Haicheng Rong, Min Xie, Anders Madsen, Arek Bedrossian, Nikolaos Chatzimanolis, Subsea 7, United Kingdom; Rafael F. Solano, Antonio P. G. Romero, Petrobras, Brazil

In-Place Design Challenges of Rigid SLWR Exposed on Severely Uneven Seabeds in Ultra Deep-Water
Nathalie Virga, Stephane Pattedoie, Adel Jebali, TechnipFMC, France; Natasha Yule, TechnipFMC, UK; Airindy Ayu Felisita, Guttorm Grytøyr, Sigve Orheim Drabløs, Equinor, Norway

Research on Bending Capacity of Corroded Bimetallic Composite Pipe Welded Joints Based on Improved AVOA-BP Algorithm
Shuang Yao, Yu Zhang, Ting Cao, Lujie Li, China University of Petroleum (Beijing), China

Simplifying RCM Complexity for Rigid Flowlines: Enhancing Operational Confidence in Ultra-Deepwater Applications
Adel Jebali, Wiem Labbene, Thomas Robert, TechnipFMC, France

Installation Mechanics and Stability Assessment of HDPE Subsea Pipelines [Oral presentation]
Paul Jukes, Ferdinand Djayaputra, Gihan Ponweera, 2H Offshore Inc., USA

24. DEEP OCEAN MINING I: Seabed Minerals/Dredging/Mining 1
Monday June 1 16:20 Narcissus
Chair: Frank Lim, Marine Technology Innovation Center, China

Research on Control Technology of Deep Sea Mining Drilling Rigs
Yayi Wu, Nan Lu, Shanghai Maritime University; Yuhong Wang, Zhejiang University; Ji Zeng, Shanghai Maritime University; Ziqiang Ren, Zhejiang University; Zhonghui Zhou, Zhejiang Wenhai Technology Co, China

Investigation of Wave-Induced Motions and Ladder Slamming for Self-Propelled Cutter Suction Dredger
Qi Zhao, Xinquan Chen, Shanghai Jiao Tong University, China

Experimental Study on Stability and Failure Characteristics of Overlying Cohesive Soil Layer Caused by Sub-Surface Dredging
Feixin Wang, Kang Xie, National Engineering Research Center of Dredging Technology and Equipment; Ailan Che, Shanghai Jiao

Tong University; Zhaoxiang Xiong, Chen Zhang, National Engineering Research Center of Dredging Technology and Equipment, China

Study on Fluid-Solidified Soil Prepared from Coastal Dredged Sediment Modified by Cement-alkali-slag Composite Curing Agent
Xuyuan Zhao, Jifu Yin, Shengbang Liu, Natl Eng. Research Ctr for Dredging Technology & Equipment; Huaqiang Cheng, Wuhan Municipal Construction Group Co, China

Research on the Impact and Improvement Path of Marine Resources on the Development of Tianjin Port
Yue Deng, Shuming Liu, Yanli Sun, Lixi Zhao, Jingli Zhao, Hongjun Tian, National Marine Data and Information Service, China

25. GEOTECH III: Foundation
Monday June 1 16:20 Orange Blossom
Chair: Albert P Ku, DNV, USA

Enhancing Seismic Design Methodologies for Fixed Offshore Wind Turbine Foundations
Albert P Ku, DNV, USA; Marcus Klose, DNV, Germany; Junkan Wang, DNV, UK; Aswin Nagarajan Sivakumarr, Markus Starr, Arash Poursadrollah, DNV Germany; Tamara Rosales Rodriguez, DNV, Denmark; Thomas Jahnke, DNV, Germany

Analysis of Scour Effects on Hydrodynamic Loads Acting on Seabed Gravity Anchors for Submarine Cable Protection
Xiaowei Huang, China Southern Power Grid Co; Haoyu Luo, Dalian University of Technology; Hangwei Chen, Yuyang Zhang, China Southern Power Grid Co; Xianzhi Wang, Dalian University of Technology; Wenhong Qin, China Southern Power Grid Co; Dongsheng Qiao, Dalian University of Technology, China

Numerical Investigation of Cyclic Behaviour of Monopile in Cohesive Soil
Shuhan Cao, ACP Geotechnik GmbH; Khalid Abdel-Rahman, Martin Achmus, Leibniz University Hannover; Michael Müller, ACP Geotechnik GmbH, Germany

TUESDAY 08:00

26. HYDRODYNAMICS IV: Motion
Tuesday June 2 08:00 Salon I
Chair: Chungkuk Jin, Florida Inst. Of Technology, USA

Hydrodynamic Modelling of Offshore Floating Structure Incorporating Viscous Dissipation Effects
Gangqiang Li, Clarkson University; Jia Mi, Stevens Institute of Technology, USA; Peter Stansby, University of Manchester, UK

Efficient Hydroelastic Response Reconstruction of Floating Structures using Surrogate-based Optimization and 2D DMB Models
Chungkuk Jin, Seong Hyeon Hong, Florida Institute of Technology, USA; Do Kyun Kim, Seoul National University; Seungjun Kim, Korea University, Korea

Evaluation of the Impact of Diffraction and Radiation Forces Modeling for the Ship Surf-Riding Simulations in Bi-chromatic Following Waves Conditions
Katarzyna Warnke-Olewniczak, Zbigniew Macikowski, Gdansk University of Technology, Poland; Jerzy Matusiak, Aalto University, Finland; Przemyslaw Krata, Tomasz Hinz, Gdansk University of Technology, Poland

Numerical and Experimental Analysis of Motion Responses for a Research Vessel with a Moonpool in Regular Waves
Bo Han, China Ship Scientific Research Center; Decheng Wan, Shanghai Jiao Tong University, China

Real-time Interval Forecasting of Ship Motion Responses Using Conformalized Quantile Regression
Baoyu Qin, Maokun Ye, Decheng Wan, Shanghai Jiao Tong University, China

27. RENEWABLE ENERGY IV: FOWT

Tuesday June 2 08:00 Salon VI

Chair: Hua Liu, Shanghai Jiao Tong University, China

Numerical Analysis of Aerodynamic Characteristics of the NREL S826 Airfoil at Different Reynolds Numbers
Zhihao Tang, Yisheng Yao, Maokun Ye, Decheng Wan, Shanghai Jiao Tong University, China

Analysis of the Integrated Coupled Response of a 15-MW Floating Wind Turbine Subjected to Focused Wave Actions
Min Li, Weiwen Zhao**,** Decheng Wan, Shanghai Jiao Tong University, China

Investigation of a Wake Model for Floating Offshore Wind Turbines with Vertical Wake Deflection under Pitch Motion
Mingqiu Liu, Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong University, China

Numerical Simulation of Flow Field Interference among Multiple Substructures of a Floating Offshore Wind Platform
Qinwen Zhang, Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

A Deep-Learning Approach for Super-Resolution Reconstruction of Wind Turbine Wakes in Atmospheric Boundary Layers

Maokun Ye, Shanghai Jiao Tong University; Hanqiao Han, Wuhan Second Ship Design and Research Inst.; Mingqiu Liu, Decheng Wan, Shanghai Jiao Tong University, China

Flow Field Prediction Around the S826 Airfoil Based on Graph Neural Network
Yisheng Yao, Shanghai Jiao Tong University; Haiting Yu, Wuhan Second Ship Design and Research Institute; Maokun Ye, Decheng Wan, Shanghai Jiao Tong University, China

28. AST IV: Special Ships 1

Tuesday **June 2** **08:00** **Salon II**

Chair: Jilong Chu, China Ship Scientific Research Center, China

Data Analysis of the Maneuverability Test of Unmanned Vessels
Wenliang Zuo, Shanghai Maritime University; Wei He, China Classification Society; Haoyun Gu, Shanghai Maritime University; Ji Zeng, Jianze Bi, Ke Wang, Shanghai Maritime University, China

Research on Dynamic Optimization of Intelligent Marine Air Conditioning Systems
Mengjie He, Shanghai Maritime University; Jianhua Deng, Shanghai CRRC Hange Marine & Offshore Engineering Co; Xinqiao Zhang, CSSC Cruise Technology Development Co; Pan Gao, Shanghai Maritime University; Yong Yang, Songyan Mai, CSSC Cruise Technology Development Co, China

A Prediction Method and Model Experiments on Surf-riding and Broaching in Stern-Quartering Irregular Waves
Jilong Chu, Peijie Zhang, Shuxia Bu, Chen Yang, China Ship Scientific Research Center, China

Study on the Determination of Roll Angle of a Catamaran Based on the Weather Criterion
Jimin Jia, Lilan Zhou, Wuhan University of Technology; Jingyu Cui, Wuhan Ship Development and Design Institute; Wei Li, China Ship Development and Design Center, China

Development of a Dynamic Positioning Control System for a Small ASV Using VSC
Makoto Morito, Luka Fujimori, Takao Horiyama, Yujin Eto, Junichiro Tahara, Tokyo University of Marine Science and Technology; Kenichiro Sato, Marine Works Japan, Japan

29. UNDERWATER TECH IV: AUV/ROV 3

Tuesday **June 2** **08:00** **Salon VII**

Chair: Kai Wang, Wuhan Technical College of Communications, China

Analysis of the Resistance Performance for Micro-AUV Based on CFD
Kai Wang, Feng Wu, Wei Zhang, Chang Peng, Wuhan Technical College of Communications, China

A Method for Predicting the Resistance of Submersible Unmanned Surface Vehicles Based on Data Augmentation Using an Improved GAN
Yideng Wen, Yuanhang Hou, Dalian Maritime University; Mengyao Jia, China State Shipbuilding Corp; Kemayue Wang, Dalian Maritime University, China

Improving Bidirectional-RRT for AUV Path Planning in Underwater Environments [Proceedings only]
Chaochao Zhu, Bolun Huang, Qi Yang, Shanghai Jiao Tong University, China

Design and Control Performance Research of Autonomous Underwater Vehicle Balance System
Yuanman Yang, Zhiqiang Yang, Zelang Qin,Yaojia Liu, Yuanqing Qin, Huazhong University of Science and Technology, China

Cost-Aware Hybrid Locomotion Path Planning for Amphibious Robots in Underwater Crawling Tasks
Jiawei Li, Huazhong University of Science and Technology; Shunqi Yang, Kunming Shipborne Equipment Research & Test Center; Yuanqing Qin, Yaojia Liu, Guohua Xu, Huazhong University of Science and Technology, China

30. OFFSHORE TECH IV: FPSO 1

Tuesday **June 2** **08:00** **Salon III**
Chair: Yan Wen, Shanghai Waigaoqiao Ship Building Co., Ltd, China

Design Wave Analysis of Governing Loads for Structural Strength Evaluation of a Cylindrical FPSO and Its Bilge Box
Shiyuan Zhang, Shuai Li, Xiaolong Yang, Shi Deng, Jingkai Wang, Zhiyuan Ji, Offshore Oil Engineering Co, China

Analysis of Towing Resistance for Non Self Floating Immersed Tunnel in Shallow Water
Linwang Su, Yaxin Zhang, Yiming Zhao, Huanan Zuo, CCCC Fourth Harbor Engineering Institute Co, China

Optimized Design and Strength Analysis of FPSO Helicopter Platform Support Structure
Yan Wen, Hongtao Yuan, Chunhui Li, Bin Wu, Huan Zhang, Shanghai Waigaoqiao Ship Building Co., Ltd, China

Research on Blast Assessment of the Front Wall of FPSO
Chunhui Li, Yan Wen, Bo Zhou, Hankun Yang, Yuchun Du, Gang Chen, Shanghai Waigaoqiao Shipbuilding Co., Ltd, China

Numerical Simulation on Hydrodynamic Effects of Serrated Heave Plates in Cylindrical FPSO
Shenglei Fu, Wei Gao, Yuanfang Li, CNOOC Research Institute; Yuan Zhuang, Decheng Wan, Shanghai Jiao Tong University, China

31. SPRU IV: Riser 1 Motion Response, Fatigue

Tuesday June 2 08:00 Salon VIII
Chair: Frank Lim, Marine Technology Innovation Center, China

Numerical Modelling of Riser-Soil Interaction for Fatigue Assessment in the Touchdown Zone
Felipe Oliveira Ribeiro, Andre Ramiro Amorim, Diego Garcia Barroso, Subsea7, Brazil; Stelios Panayides, Subsea7, United Kingdom; Stael Ferreira Senra, Franciele Stail Bordin, Petrobras, Brazil

Comparative Study of SLWR Wave Motion Fatigue Calculations Under Swell and Wind Sea
Kevin C Man, Fengjie Yin, Bin Yue, 2H Offshore Inc, USA

Hydrodynamic Forces on Subsea Power Cables in the Vicinity of Monopile Structures
Wenjing Lyu, Jens Ley, Jan Wobig, DST Entwicklungszentrum für Schiffstechnik und Transportsysteme e.V., Germany

Dynamic Response and Fatigue Analysis of Floating Cryogenic Hoses for Offshore Ship-to-Ship Transfer
Miaoer Liu, CNOOC Gas & Power Group; Bingchen Zou, Dalian University of Technology; Endao Li, Xinxin Li, CNOOC Gas & Power Group; Houbin Mao, Jun Yan, Zhaokuan Lu, Dalian University of Technology, China

A Rapid Prediction Method for Time-series Response of Floating CO_2 Hose Based on LSTM Neural Networks
Yufeng Bu, Hao Cheng, Fangqiu Li, Endao Li, CNOOC Gas and Power; Zhaokuan Lu, Ningbo Key Laboratory of Integrated Development and Safety Assurance for Deep-sea Energy and Resources, China

Mooring Characteristics of Catenary Chain with Buoy and Clump Weight in Shallow Water
Hiroaki Eto, Takumi Kanda, Nihon University, Japan

Fatigue Reassessment of Welded Joints in a Single Point Mooring Guide Tube under Altered Environmental Conditions [Proceedings only]
Qilei Tian, China Classification Society; Shousen Zhang, China Offshore Oil Engineering Co; Shengqing Zhu, CCCC Tianjin Dredging Co; Baolei Zhang, CNOOC Energy Technology & Services Co; Xiaogang Fan, Taisheng Offshore Engineering (Tianjin) Co, China

32. DEEP OCEAN MINING II: Seabed Minerals/Dredging/Mining 2
Tuesday June 2 08:00 Narcissus
Chair: Xiaoqi Guo, National Eng. Research Ctr Dredging Tech & Equipment, China

A Parametric Study on the Hydrodynamics of Capsule Transport in a Yield-Stress Fluid for a Deep-Sea Mining Lifting

Hyeonseok Choi, Shun Nomura, Hidenori Takahashi, Miyu Endo, Satoru Narita, Tokyo University of Marine Science and Technology, Japan

Effect of Mix Proportion of Carrier Materials on Required Performance of Pumps Used for Ore Lifting for Deep Sea Mining
Sosuke Ono, Shun Nomura, Tokyo University of Marine Science and Technology; Kazuo Tani, ART FORCE JAPAN Co; Akihiko Suzuki, Hiroshi Yabe, Akihiro Tomita, Fudo Tetra Corporation, Japan

Coupled Dynamic Modeling and Performance Analysis of a Flexible Positioning System for Cutter Suction Dredgers
WeiJie Xiu, Yanping He, Tingquan Wang, Zhe Chen, Shanghai Jiao Tong University, China

Experimental and Numerical Investigation of Near-Bottom Tailings Plumes from Deep-Sea Mining
Misha Liu, Xiaoqi Guo, Chen Zhang, Zhongwei Zhou, Chongzheng Dong, Kang Xie, Jifu Yin, CCCC National Engineering Research Center of Dredging Technology and Equipment Co, China

Research on Anti-Diffusion Technology of Tracked Walking Mechanism of Deep Seabed Mining Vehicle
Xiaoqi Guo, Zhongwei Zhou, Jifu Yin, Huapeng Wang, Chongzheng Dong, National Engineering Research Center of Dredging Technology and Equipment, China

Experimental Study on Three-Dimensional Diffusion Law of Deep-Sea Plume Generated by Cutter Suction Mining Vehicle Under Typical Operating Conditions
Huapeng Wang, Zhongwei Zhou, Jifu Yin, Kang Xie, Xiaoqi Guo, Chongzheng Dong, Jiapeng Tong, CCCC National Engineering Research Center of Dredging Technology and Equipment Co, China

33. AST XIII: Fuel, Storage and Propulsion 1

Tuesday **June 2** **08:00** **Orange Blossom**
Chair: Zhongzhe Liu, California State University, United States

CFD Modelling of Liquid Hydrogen Containment
M.Y. Oomar, Elemental Numerics (PTY) Ltd.; A. Nair, A.G. Malan, M. Bischoff, University of Cape Town, South Africa; F. Gambioli, Airbus Operations Ltd, United Kingdom

Catalytic Hydrogen Production via Integration of Agricultural and Natural Gas Resources in California for Regional Maritime Fuel Applications
Zhongzhe Liu, California State University, United States

TUESDAY 10:30

34. HYDRODYNAMICS V: Motion and Resonance

Tuesday June 2 10:30 Salon I
Chair: Lihwa Lin, US Army Corps of Engineers, USA

Investigation on Sharp Increase of Mooring Line Tensions of Floating Structure and Case Study for Tension Reduction
Byoung Wan Kim, Sa Young Hong, KRISO, Korea

Investigation of Vortex Evolution and Energy Dissipation in Wave Slamming on a Cylinder
Mingyue Gao, Ling Zhang, Dalian University of Technology; Ting Zhou, Changsha University of Science and Technology; Zhe Ma, Gangjun Zhai, Dalian University of Technology, China

Coastal Modeling of Ship Channel Improvement at Houma Navigation Canal and Port Fourchon Belle Pass, Louisiana, USA
Lihwa Lin, Zeki Demirbilek, US Army Engineer Research and Development Center; Tzenge-Huey Shih, Michael D. Sullivan, US Army Corps of Engineers, USA

Experimental Investigation of Wave-Induced Gap Resonance Between a Motion Floating Box and a Solid Caisson Using PIV Technique
Zibo Xia, Xinyu Wang, Aijun Li, Luming Shi, Xiao Liu, Ocean University of China, China

35. RENEWABLE ENERGY V: Workshop

Tuesday June 2 10:30 Salon VI
Chair: Andrew J. Goupee, University of Maine, USA

36. AST V: Special Ships 2

Tuesday June 2 10:30 Salon II
Chair: Minsung Park, KRISO, Korea

Data-Driven Model Predictive Control based on Grey-box Model Using v-Twin Support Vector Regression : Application to Unmanned Surface Vehicle
Minsung Park, Geun-Tae Yim, Korea Research Institute of Ships and Ocean Engineering, Korea

Resistance Estimation and Technology Analysis of Flexible Side-hull SES
Zongke Zhang, Haipeng Zhang, Genquan Zhang, Yifan Xiong, Shengjie Xu, Marine Design & Research Institute of China, China

Research on the Motion and Structural Response Characteristics of Trimaran in Waves
Haotuo Qu, Yuji Miao, Songtao Chen, Xinyun Ni, Xiuhong Zhou, Yixin Qian, Mengxiao Gu, Minggang Tang, China Ship Science Research Center, China

37. UNDERWATER TECH V: Control

Tuesday June 2 10:30 Salon VII

Chair: Yizhe Dou, Sealien Robotics Ltd, China

The Attitude Correction Strategy for Underwater Robots
Yizhe Dou, Tianyi Li, Jun Li, Sealien Robotics Ltd; Xianyuan Yang, Guangzhou Institute of Energy Conversion, CAS; Guocheng Zhao, Shanghai Jiao Tong University, China

Intelligent Emergency Decision-Making and Fault-Tolerant Control Technology for Underwater Vehicles Under Typical Emergency Conditions
Shuwen Cao, Panpan Qiao, Ke Gu, Hongjun Qiao, Guohua Xu, Huazhong University of Science and Technology, China

Study Analysis and Optimal Design of Towed Buoy for High-Speed Underwater Vehicle Communications
Ke Gu, Bin He, Junwei Li, Yuanqing Qin, Guohua Xu, Huazhong University of Science and Technology, China

38. OFFSHORE TECH V: FPSO 2

Tuesday **June 2** **10:30** **Salon III**

Chair: Jad I. Boksmati, Saudi Aramco, Saudi Arabia

Numerical Study on Continuous Time-Domain Analysis of Float-over Installation
Licheng Qin, Chen He, Jiqiang Wang, Jinyi Cheng, Yi Guo, Min Wang, Offshore Oil Eng. Co, China

Effect of Climate Change on Structural Integrity and Functionality of Offshore Installations
Rabih A. Khodr, Jad I Boksmati, Sami A Ghamdi, Saudi Aramco, Saudi Arabia

Numerical Analysis of Geotextile Concrete Mattress During Installation Under Flow Conditions
Jie Yang, CCCC Shanghai Dredging Co; Rui Tang, Shuo Zhao, Yanbo Liu, Harbin Engineering University, China

Optimized Design of Installation Process for Explosion-Proof Lights with B15 Covers in FPSO Accommodation
Wei Huang, Shuguang Ma, Weiwen Kong, Hongtao Yuan, Jianguo Zhao, Haiwen Zhang, Wei Du, Shanghai Waigaoqiao Shipbuilding Co, China

Feasibility and Comparative Study for a Conceptual Design of Floating Offshore Photovoltaic Mooring System
Shuzhou Jiang, Yu Lin, Xinyi Wu, Ke Fan, Weicheng Lei, Pengfei Chen, Jing Dong, Shanghai Investigation, Design & Research Inst., China

39. SPRU V: Pipeline 4 - Materials

Tuesday **June 2** **10:30** **Salon VIII**

Chair: Paul Jukes, 2H Offshore, USA

Hydrogen Sulfide Environments A694 F65 Manufacturing Process for Subsea Forgings
Hairong Xiong, Offshore Oil Engineering Co; Yong Pan, Roc-Master Piping Solution Co; Jiankang Yuan, Offshore Oil Engineering Co; Zewen Jian, Roc-Master Piping Solution Co; Xiangjie Sun, Offshore Oil Engineering Co; Xiaoqian Yuan, Roc-Master Piping Solution Co; Wei Yang, Offshore Oil Engineering Co; Qinwei Yu, Roc-Master Piping Solution Co, China

Enhancing Hydrogen Compatibility of Pipeline Bends and Fittings through Optimized Heat Treatment and Microstructural Design
Duo Huang, Peng Wang, Tubular Goods Research Institute; Xiaoqiang Zhang, PipeChina Engineering Technology Innovation Co; Hui Feng, Lei Wang, Qiang Chi, Tubular Goods Research Institute, China

Prediction Technology for Mechanical Properties in Line Pipe Using Strain Reproduction Test
Eiji Tsuru, Nippon Steel Technology Co; Takumi Miyake, Taishi Fujishiro, Taro Muraki, Nippon Steel Corporation, Japan; Atul Srivastava, Narendra Patidar, Welspun Corp, India

Optimization of Heat Treatment Process for High-Strength Induction Heating Bends and Property Prediction
Peng Wang, Duo Huang, CNPC Tubular Goods Research Institute; Xiaoqiang Zhang, PipeChina Engineering Technology Innovation Co; Lei Wang, Lingkang Ji, Qiang Chi, CNPC Tubular Goods Research Institute, China

Development and Application of High Strain Submarine Line Pipe: Research Progress and Key Technologies
Lei Wang, Lingkang Ji, Xiongxiong Gao, Duo Huang, Peng Wang, Weiwei Zhang, Hongyuan Cheng, Qiang Chi, CNPC Tubular Goods Research Institute, China

40. DEEP OCEAN MINING III: Seabed Minerals/Dredging/Mining 3
Tuesday June 2 10:30 Narcissus
Chair: Frank Lim, Marine Technology Innovation Center, China

EDEM-Based Discrete Element Simulation of Deep-Sea Sediment Sampling
Jinhai Luo, Haocai Huang, Wei Bu, Linlin Sun, Zhejiang University, China

Rationale and Parametric Optimisation of a Free-Standing Deep Sea Mining Riser
Shuai Cui, Federal University of Rio de Janeiro, Brazil; Frank Lim, Lixin Xu, Marine Technology Innovation Center, China

Development of an IoT and Big Data Based Safety Monitoring and Early Warning System for Rainfall-Induced Landslide

Arghya Uthpal Mondal, Xiaonan Liu, Bingqi Li, China Institute of Water Resources and Hydropower Research, China

Study on the Preparation Technology of Deep-sea Rare Earth Sediment Simulation
Chongzheng Dong, Zhongwei Zhou, Kang Xie, Shengbang Liu, Jifu Yin, National Engineering Research Center of Dredging Technology and Equipment; Xingsen Guo, Ocean University of China

Study on the Mechanical Properties of Sampling Plates during In-situ Sampling of Pore Water
Ying Wang, Zhejiang University of Water Resources and Electric Power; Jiawang Chen, Donghai Laboratory, China

Fluid-structure Interaction Characteristics in Deep-sea Bionic Pressure Hulls Implosion Fabricated from Diverse Materials
Jixie Huang, Jiancai Zheng, Yuhao Gao, Min Zhao, Shanghai Jiao Tong University, China

An Intelligent Data-Driven Method for Recognizing TSHD Construction States Using a DTW-DBSCAN Hybrid Model
Ting Xu, Liuyan Wang, Wenbo Dai, National Eng. Research Center of Dredging Tech. & Equipment, China

41. AST XIV: Fuel, Storage and Propulsion 2
Tuesday June 2 10:30 Orange Blossom
Chair: Howard H. Chung, Univ of Chicago, Argonne Nat Lab, USA

Real-Time Estimation of Greenhouse Gas Emissions from Ships Based on Engine Power Prediction
Bokyeong Lee, KeNiT Co; Seoeun Kim, National Maritime and Ocean University; Daehae Kim, KeNiT Co; Suhwan Han, Pukyong National University; Eunha Gu, Sangwon Lee, KeNiT Co; Jieun Yun, National Korea Maritime and Ocean University, Korea

On Propeller Cutting and Hull-Machinery-Propeller Matching for a Bulk Carrier with Pre-Swirl Vane
Fanjin Zhang, Wei He, Hong Tang, Ziru Li, Wuhan University of Technology, China

Efficient Dual Approximate Dynamic Programming for Voyage-Ahead Energy Management of Ships
Zhu Fu, Zhentao Xu, Zhuojun Shi, Li Chen, Shanghai Jiao Tong University, China

Research on Dynamic Monitoring Algorithm of Ship Propulsion Shafting [Proceedings only]
Yifei Yu, Bohai Shipbuilding Vocational College, China

TUESDAY 13:00

ARTEMIS II RECOVERY OPERATIONS

Tuesday **June 2** **13:00** **Salon VI**

NASA Presentation (Tentative)

TUESDAY 14:00

42. HYDRODYNAMICS VI: Internal Wave

Tuesday **June 2** **14:00** **Salon I**

Chair: Gangfeng Ma, DHI Water & Environment, Inc, USA

Modeling Internal Wave Propagation and Breaking Using MIKE 3 FM
Gangfeng Ma, DHI Water & Environment, Inc, USA ; Ole Svenstrup Peterson, DHI A/S, Denmark; Jordan Matthieu, DHI Water & Environment, Inc, USA

Statistical Analyses of Internal Solitary Waves over the Continental Slope of the Northern South China Sea
Shuang Gao, Yuguo Lun, Bo Chen, CNOOC China Ltd; Qi Zhang, Haiyue Tan, CNOOC Research Institute; Yanfeng Guan, Xiaodong Huang, Ocean University of China, China

An Explainable Artificial Intelligence (XAI) Approach for Precipitation Downscaling Modeling: Identification of Key Large-scale Meteorological Predictors
Jiayue Gu, Lu Li, Gengrun Zhao, Shanghai Water Engineering Design and Research Institute Co, China

Modelling Waves Attenuations by Depth-induced Breakings in Phase-Resolved Simulations
Xianlong Lin, Qianyue Chen, Jinghua Wang, The Hong Kong Polytechnic University, China

43. TBD

Tuesday **June 2** **14:00** **Salon VI**

Chair:

44. AST VI: Coupled Ship-Seabed Maneuver 1

Tuesday **June 2** **14:00** **Salon II**

Chair: Yi Wu, CCCC Natl' Eng. Research Ctr of Dredging, China

Research on the Control Strategy of Cutter Suction Dredger Swing Speed Controller based on DDPG Algorithm
Yi Wu, Yu Kong, Hongsheng Zhang, CCCC National Engineering Research Center of Dredging, China

Research on Path Planning Method of High Pile Wharf Dredging Equipment based on Machine Learning
Liuyan Wang, Jiajun Lu, Wenbo Dai, Shu Xu, National Engineering Research Center of Dredging Technology and Equipment, China

Enhancing Safety Navigation in Narrow Channels: the COLREG Rule 9 Uncertainties
Srđan Žuškin, Ivan Vilić, Martina Žuškin, University of Rijeka, Croatia; Michele Martelli, University of Genoa, Italy

Intelligent Precision Excavation Control Method for Grab Dredgers Based on the Newton-Raphson Method
Peng Zhang, CCCC-GH Dredging Co; Hongsheng Zhang, Jingdun Pang, National Engineering Research Center of Dredging Technology and Equipment; Xuecheng Pan, Jinjun Wei, CCCC-GH Dredging Co; Lei Chen, National Engineering Research Center of Dredging Technology and Equipment, China

45. COASTAL HYDRODYNAMICS I: Foundation and Baffles

Tuesday June 2 14:00 Salon VII
Chair: Narakorn Srinil, Newcastle University, UK

Effects of Inertia versus Drag on Mangrove-Inspired Structures for Wave Attenuation
Narakorn Srinil, Yan Naung Aye, Newcastle University, United Kingdom; Butsawan Bidorn, Thanawatth Sattabongkot, Warit Charoenlerkthawin, Chulalongkorn University, Thailand

Numerical Study of a Rigid-Flexible Combined Pile Foundation Baffle Permeable Breakwater Based on CFD-CSM Two-Way Coupling
Ao Jia, Xinyu Wang, Shaodong Gong, Zhenxiang Xu, Ocean University of China, China; Domenico Davide Meringolo, Università degli Studi Mediterranea di Reggio Calabria, Italy; Ri Zhang, Tongshun Yu, Ocean University of China, China

Ensemble-Based Data Assimilation for Improving Near-Wall Velocity Prediction in Backward-Facing Step Flows
Wenbin Zhang, Shanghai Jiao Tong University; Jie Zhu, Wuhan Second Ship Design and Research Inst.; Maokun Ye, Decheng Wan, Shanghai Jiao Tong University, China

46. OFFSHORE TECH VI: Ecology

Tuesday June 2 14:00 Salon III
Chair: Ran Tao, Dalian University of Technology, China

Development and Stability Experimental Study on Novel Eco-Friendly Armor Blocks
Ran Tao, Dalian University of Technology; Ruiyi Huang, China Communications Information & Technology Group; Yun Peng, Wen-yuan Wang, Dalian University of Technology, China

Practice of Urban Lake Ecological Restoration Technology Based on Underwater Forest Engineering
Kang Xie, Jifu Yin, Feixin Wang, Peng Jin, Zhichao Shen, CCCC National Engineering Research Center of Dredging Technology and Equipment Co; Huaqiang Cheng, Wuhan Municipal Construction Group Co, China

Reduction of Sludge and Improvement of Water Quality by Nano-bubble Aeration in the Aburagafuchi Lake, Central Japan
Yoshio Noguchi, Momoki Sato, Nagoya Institute of Technology; Masashi Imasaka, Furuno Electric Co.; Akihiro Tominaga, Kenjiro Sho, Nagoya Institute of Technology, Japan

Development and Application of Conditioner Precise Dosing System in the Dewatering Process for Dredged Slurry
Gongxun Liu, Guojun Hong, Jifu Yin, Feixin Wang, CCCC National Eng. Research Ctr of Dredging Tech. & Equip; Huaqiang Cheng, Wuhan Municipal Construction Group Co; Huangliang Zhong, Kuilong Liu, CCCC National Eng. Research Ctr of Dredging Tech. & Equip, China

Structural Classification and Hydrometeorological Implications of Extreme Daily Rainfall in a Coastal Megacity
Jiayan Xu, Shuguang Liu, Zhengzheng Zhou, Guihui Zhong, Tongji University, China

47. SPRU VI: Installation, Operation, Monitoring

Tuesday **June 2** **14:00** **Salon VIII**
Chair: Ping Liu, Worley Offshore Energy, Netherlands

Deepwater Challenges: Reel-Lay Installation Summary of the Mero 3 Project in Offshore Brazil
Perdinan Reagan, Tulio Silveira Alencar, Mirvais Rustame, Subsea 7, United Kingdom; Pedro Luiz Ferreira Mendes, Petrobras, Brazil

Estimating Global Curvature in a Submarine Pipeline from Survey Data
Ruud Selker, Ping Liu, Rui Rodrigues, Jeroen Hoefakker, Worley Offshore Energy, The Netherlands

Development and Sea Trial of Online Monitoring and Security Warning System for Ultra-Deepwater Drilling Riser
Leixiang Sheng, State Key Laboratory of Offshore Oil and Gas Exploitation; Weihua Guo, Linsong Song, Xueyi Jin, Zhiming Yin, China Oilfield Services Ltd; Jinlong Wang, CNOOC Research Inst., China

Drilling Mode and Riser Research for Cylindrical Floating Deepwater Dry Tree Platform
Yingwen Ma, Jinlong Wang, Mingchun Wang, Leixiang Sheng, CNOOC Research Institute Ltd, China

Experimental Study on Subsea Pipeline Deformation Inspection with Axially Staggered Soft Caliper Sensors
Buyun Tang, China University of Petroleum-Beijing; Wei Li, Pipe China Beijing Pipeline Co; Yanshan Li, Hang Zhang, China University of Petroleum (Beijing), China

48. HPM I: Pipeline and Welding Technologies

Tuesday June 2 14:00 Narcissus
Chair: HyunWoo Jin, ExxonMobil Technology and Engineering, USA

Simulation-Based Prediction of Longitudinal and Transverse Material Properties in JCOE Pipes
Jiwoon Yi, Soo-Chang Kang, POSCO, Korea

Advanced Sour-Resistant X65 Linepipe Steels with Controlled Surface Hardness over Wide Thickness Range
Yoshinori Nomura, Taishi Fujishiro, Nobuyuki Yoshimura, Kiyoshi Ebihara, Taro Muraki, Nippon Steel Corporation, Japan

Integrated Design-to-Production Framework for Welding Distortion Prediction and Shape Accuracy Control in Ship Block Assembly
Seok-je Jo, Jae-hee Kim, Bong-gook Kang, Dong-ju Lee, HD Korea Shipbuilding & Offshore Engineering Co, Korea

Parametric Study of Mechanical Crack Arrestor Design for High-Pressure Pipelines Using Simplified Mechanical Modeling Validation
Abdullah Othman, Marcelo Paredes, Texas A&M University, USA

Simulation Method for Fracture Propagation in Submarine CO2 Pipelines Based on Semi-Fluid-Structure Interaction
Jun Huang, CNOOC Research Institute**;** Ruihao Liu, China University of Petroleum Beijing; Xianhong Feng, CNOOC Research Institute; Jing Xu, China University of Petroleum Beijing; Yancheng Li, CNOOC Research Institute; Zengli Peng, Tao Xiang, China University of Petroleum Beijing, China

49. AST XV: Fuel, Storage and Propulsion 3

Tuesday June 2 14:00 Orange Blossom
Chair: Howard Chung, Argonne National Laboratory, USA

Data-Driven Optimal Operation Strategy for Hybrid Electric Propulsion Ships Considering Oceanographic Conditions and Actual Operational Data
Yoon-Gyu Jang, Ki-Su Kim, Ji-Won Min, Yu-Jun Choi, Suk-Hyeon Son, Jae-Woong Hwang, University of Ulsan, Korea

Numerical Study on the Aerodynamic Performance of Rotor Sails
YuKun Chen, JiaBin Bu, Jiangtao Qin, Wuhan University of Technology, China

Numerical Study on Drag Characteristics of Superhydrophobic Coatings under Different Contact Angles
Wenwei Hu, Wei He, Qian Liu, Ziru Li, Wuhan University of Technology, China

Parametric Modelling and Open-Water Performance Analysis of Biomimetic Tubercled Propellers

Zefeng Yan, Yongyan Sun, Xiangning Huang, Ziru Li, Wuhan University of Technology, China

TUESDAY 16:20

50. HYDRODYNAMICS VII: Typhoon

Tuesday June 2 16:20 Salon I

Chair: Vincenzo Silvestri, Polytechnique Montreal, Canada

On the Correlations between Climatic Oscillation Indices and Waves Generated by Typhoons and Extratropical Cyclones in the Pacific Coastal Waters of Northern Japan
Mitsunari Hirasawa, Cold Region Air and Sea Ports Engineering Research Center; Seiji Hirano, Civil Engineering Research Institute for Cold Region, Japan

Comparisons of Active Earth Pressure Distributions on Cylindrical Shafts in Cohesionless Soils
Vincenzo Silvestri, Claudette Tabib, Polytechnique Montreal, Canada

Comparative Neural Network Typhoon Track Prediction and Storm Surge Response
Jianan Shi, Sudong Xu, Kai Yin, Mengdi Ma, Shishuang Wu, Southeast University, China; Wenrui Huang, Florida A&M University, USA

Analysis of Typhoon Wave Characteristics under Similar Typhoon Tracks in Guangdong Waters
Haozhu Wu, Guangdong Provincial Highway Construction Corp; Yanan Xu, Tianjin Research Institute of Water Transport Engineering; Yu Bi, Yuxiang Feng, Guangdong Provincial Highway Construction Corp; Zuolei Yang, CCCC Highway Bridges National Engineering Research Centre Co; Haiyuan Liu, Tianjin Research Institute of Water Transport Engineering, China

Development of a Stochastic Typhoon Model Considering Spatial Variations in Skewness and Kurtosis of Statistical Quantities
Ryota Sumi, Kazuhiko Honda, Yu Chida, National Institute for Land and Infrastructure Management, Japan

Research on the Wave-Dissipating Performance of a Floating Breakwater under Typhoon Wave Based on Field Observation
Zhongliang Yang, Second Institute of Oceanography, MNR; Rusheng Wang, Hangzhou Guohai Marine Engineering Survey and Design Institute Co; Weiyong Shi, Qin Ye, Second Institute of Oceanography, MNR, China

51. OFFSHORE TECH VII: Workshop

Tuesday June 2 16:20 Salon VI

Chair: Byoung Wan Kim, KRISO, Korea

52. AST VII: Coupled Ship-Seabed Maneuver 2
Tuesday June 2 16:20 Salon II
Chair: Radosław Kołodziej, Ship Handling Research & Training Ctr, Poland

Research on Ship Track-Keeping Control Method in Bridge Area Waters Based on MMG-PID
Quanjun Dou, Hanfu Duan, Zhi Yuan, Yixiong He, Jingxian Liu, Wuhan University of Technology, China

Sensitivity Analysis of MMG-Based Ship Maneuvering Predictions to Variations of its Hydrodynamic Coefficients
Radosław Kołodziej, Ship Handling Research and Training Centre, Poland

Assessment of Navigational Safety for Small Fishing Vessels in Real Sea Conditions Using CFD
Sangmin Lee, Kunsan National University; Bokyeong Lee, KeNiT Co, Korea

The Influence of Side Body Layout of Asymmetric Catamaran on Turning Performance
Fengchao Yan, Ang Li, Xiao Bing Kong, Marine Design & Research Institute of China, China

Study on Wave-Making Suppression Characteristics of Spray Rails at the Bow of High-Speed Craft
Jing Yuan, Aiguo Sui, Yi Jiang, Tingyu Jin, Weitong Xu, China Ship Scientific Research Center, China

CFD-based Investigation of Speed Discrepancies in Same-Type Ship Sea Trials
Qian Chen, Shi-xi Guo, Zhou-yuan Xu, Ai-hua Gao, Shanghai Waigaoqiao Ship Building Co., Ltd, China

Research on Standard Test Scenario Generation Technology for Collision Avoidance of MASS Based on ROS [Proceedings only]
Xiangyu Chen, Bingcheng Miu, Hui Sun, Siyu Tang, Zong Tao, Xiyang Liu, China Ship Scientific Research Center, China

53. UNDERWATER TECH VI: Workshop
Tuesday June 2 16:20 Salon VII
Chair: Shojiro Ishibashi, JAMSTEC, Japan

54. MECHANICS & MATERIALS I: Materials and Buckling 1
Tuesday June 2 16:20 Salon III
Chair: Jonas Hinrichs, Fraunhofer Research Inst., Germany

A Study of Sea Turtles Collision with Offshore MHK Turbines: A Combined Experimental and FE Analysis

Abdul Aziz, Hassan Mahfuz, Ivana Lezcano, Jeanette Wyneken, James VanZwieten, Florida Atlantic University, USA

Lateral Buckling Design for Flowlines in Ultra-Deepwater HPHT Conditions Over Severely Irregular Seabed
Adel Jebali, TechnipFMC, France; Lars Hermanrud, Equinor, Norway; Mathieu Bardin, Mennad Ait Salaht, TechnipFMC, France; Hroar Andreas Nes, Equinor, Norway

Overall Safety Assessment Method for Jacket Platforms Based on Fatigue Damage
Zhao Liu, Huaizhou Huang, Yujie Yuan, Yajie Liu, Da Shen, Offshore Oil Engineering Co, China

Experimental and Numerical Research on Mechanical Performances of Cylindrical Pressure Hull with Large-scaled Orthogonal Tunnel
Junjuan Tang, State Key Laboratory of Deep-sea Manned Vehicles; Xiaowei Ye, Taihu Laboratory of Deep-sea Technological Science; Aifeng Zhang, State Key Laboratory of Deep-sea Manned Vehicles; Rong Yu, Wuxi University of Technology, China

Continuous Wheel-Rail Force Reconstruction for High-Speed Railway based on Gaussian Load Distribution Framework
Mingyu Wang, Yi Zhang, Southeast University; Ji Shi, Tsinghua University, China

Recent Investigations on Large-size Bolting Assemblies of the Diameter M56 under Axial Fatigue Loading
Jonas Hinrichs, Ralf Glienke, Fritz Wegener, Fraunhofer Inst. for Large Structures in Production Engineering IGP; Melanie Hagemann, University of Applied Sciences Technology, Business and Design; Mathias Schwarz, Fraunhofer Inst. for Large Structures in Production Engineering IGP; Daniela Schwerdt, University of Applied Sciences Technology, Business and Design; Wilko Flügge, Fraunhofer Inst. for Large Structures in Production Engineering IGP, Germany

55. SPRU VII: Riser 2-Flexibles

Tuesday **June 2** **16:20** **Salon VIII**
Chair: Frank Lim, Marine Technology Innovation Center, China

Multi-Objective Optimization of the Carcass in Dynamic Flexible Pipes Using the NSGA-II Algorithm
Siao Jiang, Yu Zhang, Maolong Wang, Fucheng Li, China University of Petroleum (Beijing), China

Multi-objective Trade-off and Pareto Front Analysis for Cross-wound Armor Layers in Flexible Pipes
ChunHong Hu, CNOOC Engineering; Rui Li, China University of Petroleum (Beijing); HuaiLiang Li, CNOOC Engineering; Yu Liu, Weidong Zhang, ShunTian Lu, YiXuan Zhuang, Jin Peng, China University of Petroleum (Beijing), China

Thermal-Mechanical Bending Hysteresis Analysis of Unbonded Flexible Pipes Considering Temperature-Dependent Material Properties
Weipeng Chu, Yu Zhang, Xinyu Qi, Xiang Liu, China University of Petroleum (Beijing), China

Parametric Sensitivity Analysis of Cross-wound Armor Layers in Flexible Pipes: A Multi-objective Perspective
Yang He, Offshore Oil Engineering Co.; Xiaoqian Yu, China University of Petroleum (Beijing); Chunhong Hu, Offshore Oil Engineering Co.; Yu Liu, PengFei Xu, Qiuhe Chen, Jing Xu, Jinqiang Yao, China University of Petroleum (Beijing), China

56. HPM II: Materials & Technologies for Cryogenic
Tuesday June 2 16:20 Narcissus
Chair: Sangchul Lee, POSCO, Korea

Keynote 2

Microstructural Mechanics Governing PWHT-Free Application of Conventional HT780 Steel in Large LCO2 Tanks [Oral presentation]
Yuto Oguchi, The University of Tokyo, Japan

Expansion of high manganese steel to eco-energy industry [Oral presentation]
Sangchul Lee, POSCO, Korea

Vacuum Characterization of LH2 Tank Incorporating Hollow Glass Microsphere Insulation
Younghyun Choi, Jaeyoung Jeong, POSTECH; Junhwan Jeon, Taeyoon Park, Taemin Cho, Samsung Heavy Industries; HangJin Jo, POSTECH, Korea

57. AST XVI: Fuel, Storage and Propulsion 4
Tuesday June 2 16:20 Orange Blossom
Chair:

Go to Session 49: AST XV: Fuel, Storage and Propulsion 3

WEDNESDAY 08:00

58. HYDRODYNAMICS VIII: Flow Simulation
Wednesday June 3 08:00 Salon I
Chair: Gucheng Zhu, Shanghai Merchant Ship Design & Research Inst., China

Multi-Resolution Data Fusion for Turbulent Flows in Large Eddy Simulation Using a Kalman Filter

Yujia Liu, Shanghai Jiao Tong University; Haiting Yu, Wuhan Second Ship Design and Research Inst.; Maokun Ye, Decheng Wan, Shanghai Jiao Tong University, China

Memory-Efficient GNN Training to solve PPE in 3D MPS Simulations
Congyi Huang, Dalian University of Technology; Decheng Wan, Shanghai Jiao Tong University; Zhe Sun, Guiyong Zhang, Dalian University of Technology, China

A Numerical Investigation on Hydrodynamic Characteristics of the Free Surface in a High Speed Circulating Water Channel
Gucheng Zhu, Shanghai Merchant Ship Design & Research Institute; Zuogang Chen, Shanghai Jiao Tong University; Shuanbao Jin, Naval University of Engineering; Kanghui Zheng, Shanghai Jiao Tong University, China

Investigation on Particle-Based Surrogate Models for 3D Violent-Flow Simulations
Yuki Tanabe, Takefumi Higaki, Hirotada Hashimoto, Osaka Metropolitan University, Japan

59. POLAR TECH I: Ice Mechanics
Wednesday June 3 08:00 Salon VI
Chair: Rocky Taylor, Memorial University of Newfoundland, Canada

Temporal and Spatial Variability of Ice Ridge Concentration and Morphometric Parameters in the Russian Arctic Seas Based on Data from Submerged Autonomous Buoy Stations
Sofya V. Tsedrik, Roman B. Guzenko, Konstantin G. Smirnov, Arctic and Antarctic Research Institute; Konstantin A. Kornishin, Dmitry O. Yakimushkin, Petr A. Tarasov, Teymur E. Mamedov, Artic Science Center, Russia

Internal Structure and Consolidated Layer of Shear Ice Ridge Investigated at "North Pole--42" Drifting Station [Proceedings only]
Victor V Kharitonov, AARI, Russia

60. AST VIII: Ship Hull Design and Building 1
Wednesday June 3 08:00 Salon II
Chair: Decheng Wan, Shanghai Jiao Tong Univ, China
Co-Chair: Byoung Wan Kim, KRISO, Korea

CFD-Based Efficient Optimization Method for the Hydrodynamic Performance of a Flat Merchant Ship
Zhiqiang Liu, Xiyang Liu, Yanxia Wang, Jia Su, China Ship Scientific Research Center; Decheng Wan, Shanghai Jiao Tong University, China

Application and Validation of an Improved Graph Attention Network for Steady Ship-Wave Prediction of the KCS Hull

Kang Chen, AnZhu Sun, Zhang Zhu, Cheng Cheng, Wei Guo, Feng Zhao, China Ship Scientific Research Center, China

Study on Hull Form Optimization Design Driven by Geometric Features
Anran Zheng, Jinfang Wei, Qiang Zhao, Yanxia Wang, Zhiqiang Liu, China Ship Scientific Research Center, China

Comparative Analysis of Basis Functions in Radial Basis Interpolation and Application in Hull Surface Deformation [Proceedings only]
Wei Jiang, Jing Chen, Wuhan Wimep New Energy Power Co; Baiwei Feng, Wuhan University of Technology, China

Radial Basis Function Interpolation of Hull Surfaces for Deformation Analysis Based on the Conjugate Gradient Method [Proceedings only]
Qi Zhang, Fan Wang, Wuhan Wimep New Energy Power Co; Baiwei Feng, Wuhan University of Technology, China

Hull Form Optimization Utilizing Volume Mesh Deformation Method
Yabo Wei, Wentao Zheng, Yuhan Wu, China Ship Scientific Research Center; Decheng Wan, Shanghai Jiao Tong University, China

61. COASTAL HYDRODYNAMICS III: Beach

Wednesday June 3 08:00 Salon VII
Chair: Luca Martinelli, Universita di Padova, Italy

Implementation of a Digital Filter for Active Wave Absorption Systems in a Wave Flume
Luca Martinelli, Federica Ferroni, Omar Mohamad, Universita di Padova, Italy

Numerical Simulation of Wave Attenuation by Coral-seeding for Reef Restoration
Zuo-Dong Liang, De-bo Zheng, Xiu-ling Tang, Wen Huang, Guangxin Huang, Guangxi University, China

Modelling and Predicting Shoreline Evolution in the Volta Delta, Ghana
Yingying Cai, Wuming Yin, Shanhang Chi,Yuan Li, Hohai University, China; Joshua Nana Asiedu-Bondzie, University of Cape Coast, Ghana

Experimental and Parametric Modelling of Wave Transformation on a Reef Flat
Mingjie Gong, Huimin Zhu, Jinjian Xiong, Lei Zhang, Jiangsu Province Surveying & Mapping Engineering Institute, China

Seasonal Performance Assessment of Oscillating Water Column Devices in the Coastal Waters off Keelung, Taiwan

Yun-Hsuan Chu, Tai-Wen Hsu, Ting-Chieh Lin, Hung-Cheng Tao, National Taiwan Ocean University, Taiwan China

Feasibility Study of Artificial Beach Nourishment in Front of the National Taiwan Ocean University Seawall Using XBeach
Hung-Cheng Tao, Tai-Wen Hsu, National Taiwan Ocean University, Taiwan China

62. MECHANICS & MATERIALS II: Materials and Buckling 2

Wednesday June 3 08:00 Salon III
Chair: Ralf Glienke, Fraunhofer IGP, Germany

Characterisation and Static Load-bearing Capacity of Large-size Bolting Assemblies
Maik Doerre, Ralf Glienke, Justus Mantik, Jonas Hinrichs, Fraunhofer Institute for Large Structures in Production Engineering IGP, Daniela Schwerdt, University of Applied Sciences Wismar; Mathias Schwarz, Wilko Flügge, Fraunhofer Institute for Large Structures in Production Engineering IGP, Germany

Experimental Study of Box Girder Ultimate Strength under Cyclic Bending Moment
Zhaojun Song, Chuxi Chen, Wuhan University of Technology; Kang Hu, Yangtze University; Tianlong Xu, Wuhan University of Technology, China

Recent Investigations into the Fatigue Strength of Forged Flanges in the Support Structure of Offshore Wind Turbines
Ralf Glienke, Gregor Steglich, Markus Schröder, University of Applied Sciences Technology, Business and Design; Florian Kalkowsky, Maik Dörre, Fraunhofer-Institute for Large Structures in Production Engineering IGP; Filip Wegener, JBO Engineering Group GmbH; Frithjof Marten; Flensburg University of Applied Sciences, Germany

Hydroelastic Behavior on a Floating Structure of Offshore Wind Turbine
Gyu-Jin Kim, HD Hyundai Heavy Industries; Youjin Yim, Front Energies, LLC ; Sungjun Park, Hyebin Lee, Byoung-Hoon Jung, Minhan Oh, HD Hyundai Heavy Industries, Korea

Global Path Planning for Containment System Installation Based on Improved Ant Colony Algorithm with Artificial Potential Field
Guijie Shi, Shanghai Jiao Tong University; Ying Xu, Dawei Gao, University of Shanghai for Science and Technology; Deyu Wang, Shanghai Jiao Tong University, China

63. SPRU VIII: Subsea System, Soil/Sea Interaction

Wednesday June 3 08:00 Salon VIII
Chair: Ruud Selker, Worley Offshore Energy, Netherlands

CFD-DEM Investigation of Early Scour Development Around a Monopile
Shervin Samadi, Kerstin Lesny, University of Siegen; Wenjing Lyu, Development Centre for Ship Technology and Transport Systems, Germany

Numerical Investigation of Local Sediment Scouring at Riser Gooseneck Under Hydrodynamic Action
Jing Hou, CNOOC Research Institute, China

A Study on the Coupling Hydroelastic Response of a Multi-Module Very Large Floating Structure with a Mooring System
Suxi Tang, Xinyun Ni, Ze Wang, Jun Ding, Siyu Wang, Ziyang Wei, China Ship Scientific Research Center, China

Design and Integrity Considerations for CO_2 Pipeline Transportation Systems
[Oral presentation]
Paul Jukes, 2H Offshore Inc., USA

64. HPM III: Fatigue and Fracture Mechanics

Wednesday June 3 08:00 Narcissus
Chair: Jiwoon Yi, POSCO, Korea
Co-Chair: Yoshinori Nomura, Nippon Steel, Japan

Towards Reliable Prevention of Brittle Fracture in Bridge Bearings: Insights from Large-Scale Component Tests
Natalie Hoyer, Bertram Kühn, University of Applied Sciences Mittelhessen, Germany

New Findings on the Fatigue Resistance of Non-welded Constructional Details in Steel Structures based on Small-Scale and Component Testing
Markus Schröder, Ralf Glienke, Daniela Schwerdt, University of Applied Sciences Technology; Florian Kalkowsky, Wilko Flügge, Fraunhofer Institute for Large Structures in Production Engineering IGP; Mohammad Aljomaa, Natalie Stranghöner, University of Duisburg-Essen, Germany

Study on the Fracture Characteristics of Typical Joint Specimens Based on Peridynamics
Xiang Yi, Yiyang Liu, Zhengxin Li, Jingxi Liu, Huazhong University of Science and Technology, China

65. AST XVII: Fuel, Storage and Propulsion 5

Wednesday June 3 08:00 Orange Blossom
Chair: Dapeng Zhang, Shanghai Waigaoqiao Ship Building, China

Effect of Different Gas Layer Baffles on Gas Content at the Propeller Disk in Gas Layer Drag Reduction
Zhiqiang Liu, Xiaosong Zhang, Shan Wang, Jingpu Chen, China Ship Scientific Research Center; Decheng Wan, Shanghai Jiao Tong University, China

Multi-dimensional Evaluation and Strategy Research on Fuel Selection for New Shipbuilding under IMO GHG Emission Reduction Regulations
Shi-xi Guo, Sen-yuan Xiao, Chen Zhou, Wen-jie Zhang, Shi-yang Li, Shanghai Waigaoqiao Shipbuilding Co, China

Numerical Study of the Influence of Propeller Shaft Spacing on Open-Water Performance
Wen-jie Zhang, Gao-shuai Wang, Shi-xi Guo, Ai-hua Gao, Yong Guo, Shanghai Waigaoqiao Shipbuilding Co, China

Research on Airflow Field Interference of Ships with Multi-Sail Arrangement
Dapeng Zhang, Jun Hu, Yiming Huang, Aihua Gao, Zhangjian Wang, Gaoshuai Wang, Shixi Guo, Zhouyuan Xu, Shanghai Waigaoqiao Ship Building Co, China

WEDNESDAY 10:30

66. HYDRODYNAMICS IX: Acoustics at Low Mach Number

Wednesday June 3 10:30 Salon I
Chair: Shojiro Ishibashi, JAMSTEC, Japan

Analysis of Compressibility Effects on Sound Sources and Acoustic Propagation in Low-Mach-Number Noise
Jiajia Qin, Shanghai Jiao Tong University; Fuchang Zhou, Wuhan Second Ship Design and Research Inst.;Yuan Zhuang, Decheng Wan, Shanghai Jiao Tong University, China

Effects of Bottom Boundary Conditions on Wall-Pressure Fluctuations of a Finite-Span NACA0012 Airfoil
Yipei Wang, Shanghai Jiao Tong University; Jie Zhu, Wuhan Second Ship Design and Research Inst.; Weiwen Zhao, Decheng Wan, Shanghai Jiao Tong University, China

67. POLAR TECH II: Arctic Operation 1

Wednesday June 3 10:30 Salon VI
Chair: Riikka Matala, Aker Arctic Technology Inc, Finland

Utilizing Concept Comparison for Sustainable Design: Shaping Finland's Next-generation B+ Icebreaker
Riikka Matala, Railo Technology Inc; Lauri Kuuliala, Helena Orädd, Finnish Transport Infrastructure Agency; Tuomas Romu, Railo Technology Inc, Finland

Numerical Simulation of Icebreaker Sailing Through the Level Ice Region by Peridynamics Method
Yifan Li, Shanghai Jiao Tong University; Xiao Wen, Marine Design and Research Institute of China; Decheng Wan, Shanghai Jiao Tong University, China

Study on Drilling Temperature Characteristics of During Horizontal Extended-Reach Drilling in the Polar Cold Sea
Gengchen Li, Qiqi Yang, China University of Petroleum (Beijing); Lin Tao, CNOOC China Limited; Tianwei Zhang, Wenlong Li, CNOOC Research Institute; Xuyue Chen, Jin Yang, China University of Petroleum (Beijing), China

68. AST IX: Ship Hull Design and Building 2
Wednesday June 3 10:30 Salon II
Chair: Sol Ha, Mokpo National University, Korea

Data-driven Approach for Full-scale Measurement Data of Hybrid Electric-Propulsion Ship using Supervised Learning
Subin Kim, Youngjun You, University of Ulsan, Korea

Fire Protection Simulation and Escape Layout Scheme Design of Complex Navigable Tunnel
Zhengchen Lian, Zongyao Guo, Long Yu, Shanghai Jiao Tong University, China

Development and Application of Fast Scheme-Generation Tool for Unmanned Vehicle at the Conceptual Design Stage
Lecheng Li, Erna Zhang, Shanghai Jiao Tong University; Peng Tao, China Ship Development and Design Center; Long Yu, Shanghai Jiao Tong University, China

Structural Response of Ship in Soft Grounding Based on CEL Method
Jie Yang, CCCC Shanghai Dredging Co; Shuo Zhao, Lei Chen, Yanbo Liu, Harbin Engineering University, China

Research on Dynamic Optimization of Completion Integrity Quality of Typical Ship Intermediate Products
Jia-Ying Lu, Rong Cheng, Shanghai Maritime University; Yan Wang Shanghai Waigaoqiao Shipbuilding Co; Ji Zeng, Shanghai Maritime University; Hong-Fei Zeng, Yun-Zhou Zhou, Shanghai Waigaoqiao Shipbuilding Co, China

An Investigation of Optimization Methods for Encountered Directional Wave Spectrum Estimation Using Ship Response
Tomomi Yoshida, Nihon Shipyard Co; Tetsuo Okada, Yokohama National University; Shinichi Hirakawa, Nihon Shipyard Co, Japan

Robust AR Marker Recognition in Harsh Shipbuilding Environments Using an Object Detection Model
Sol Ha, Ju-Hwan Cha, Chrstian Aldo, Mokpo National University; Trinita Laras Puspita, Kanavi Mobility Co, Korea; Dave Kim, Washington State University, USA

69. COASTAL HYDRODYNAMICS IV: Tidal 1
Wednesday June 3 10:30 Salon VII
Chair: Yan Wu, Yellow River Institute of Hydraulic Research, China

Analysis on Recent Siltation Characteristics and Its Influencing Factors of the North Passage Channel in the Yangtze River Estuary
Shuhua Zuo, Tianjin Research Institute for Water Transport Eng.; Zhe Feng, CCCC Water Transportation Planning and Design Institute Co; Xiaoxiang Feng, Tianjin Research Institute for Water Transport Eng.; Ming Ying, CCCC Shanghai Waterway Survey, Design and Research Institute Co, China

Study on the Enhancement of Ship Impact Resistance of Piled Wharfs with Novel Energy-Dissipating Fenders
Jiecheng Yu, Rong Cheng, Ji Zeng, Yiting Zhan, Dawei Qiang, Ke Wang, Shanghai Maritime University, China

Marine Hydrodynamic Environmental Survey and Analysis in the Ganyu Port Area of Lianyungang Port
Shuqiao Fang, Second Inst. of Oceanography, MNR; Xihe Yue, Key Laboratory of Ocean Space Resource Management Technology; Feng Zhang, Rusheng Wang, Zhongliang Yang, Second Inst. of Oceanography, MNR, China

Mechanisms and Responses of Estuarine Hydrodynamics and Morphology to Human Activities in the Jiaojiang Estuary
Weiqi Dai, Yellow River Institute of Hydraulic Research; Jianfeng Tao, Hohai University; Shoubing Yu, Wanzhan Wang, Yan Wu, Guangzhou Wang, Yellow River Institute of Hydraulic Research, China

Analysis of Bearing Capacity Performance of Large-Diameter Group Piles in Bridge Foundations
Zheyu Yang, Yuan Zhang, Peng Xu, Zhejiang Ocean University, China

70. MECHANICS & MATERIALS III: Risk, Reliability

Wednesday June 3 10:30 Salon III

Chair: Eun Taek Shin, Incheon National University, USA

Assessing Nonlinear Interactions in Compound Flooding: A Case Study of Typhoon Maemi in Masan, Korea
Eun Taek Shin, Tae Soo Eum, Jeong Hu Lee, Kang Been Kim, Dong Hwi Kim, Chang Geun Song, Incheon National University, Korea

F–N Curve Representation of Detention Effects in a Coastal Adjacent Urban River: Static QRA vs Agent Based Dynamic QRA (HEC LifeSim)
Kang Been Kim, Eun Taek Shin, Jeong Hu Lee, Tae Soo Eum, Dong Hwi Kim, Incheon National University; Yonguk Ryu, Chonnam National University; Chang Geun Song, Incheon National University, Korea

Evolving Impact of Higher-Order Atmospheric Variability on Tropical Cyclone Hazards in the South China Sea
Yu Chang, Sunwei Li, Tsinghua University, China; Jiayao Wang, University of Notre Dame, USA

71. SPRU IX: Workshop
Wednesday June 3 10:30 Salon VIII
Chair: A.M. Gresnigt, Gresnigt Consultancy, Netherlands

72. HPM IV: Concrete and Offshore Structures
Wednesday June 3 10:30 Narcissus
Chair: HyunWoo Jin, ExxonMobil, USA

Nanostructured Thermoplastic Elastomers Reinforced with Anatase TiO_2 for Offshore and Subsea Applications
David F. Gonzalez, Hassan Mahfuz, Vivian Merk, Francisco Presuel-Moreno, Alejandra Coronel-Zegarra, Fariha Binthe Rahman, Florida Atlantic University, USA

Safety Assessment Technology for Concrete Floating Pier-Steel Pipe Pile Composite Structures [Proceedings only]
Yi Zhu, Hong-gao Luo, Wen Zhang, CCCC Fourth Harbor Engineering Co, China

73. AST XVIII: Fuel, Storage and Propulsion 6
Wednesday June 3 10:30 Orange Blossom
Chair: Zhiqiang Liu, China Ship Scientific Research Center, China

Experimental and Numerical Study on Nominal Thrust of Rim-Driven Tunnel Thruster
Juan Xu, Ziru Li, Zhijun Xiao, Wei He, Wuhan University of Technology, China

Energy-Saving Assessment of Vessels with Flettner Rotors [Proceedings only]
Su Wu, Chengsheng Zhan, Jie Zhou, Wuhan University of Technology; Heng Zhang, Wuchang Shipbuilding Industry Group Co; Dalian Zeng, Guangxi CSSC Beibu Gulf Ship & Ocean Engineering Design Co, China

WEDNESDAY 14:00

74. HYDRODYNAMICS X: Launch and Positioning
Wednesday June 3 14:00 Salon I
Chair: Takaaki Hanaki, National Maritime Research Institute, Japan

Research on the Positioning Capabilities of Unmanned Surface Vehicles Towing Buoys in Rough Seas
Qidong Fan, Shanghai Jiao Tong University; Hanyu Mao, China Ship Development and Design Center; Jingjing Liu, Long Yu, Shanghai Jiao Tong University, China

Open-Water Performance Test of Propellers Under Oblique Flow and Variable Immersion Depth Conditions

Li Zhang, Shanghai Ship and Shipping Research Institute Co.; Fengwei Xie, Harbin Engineering University; Weimin Chen, Shanghai Ship and Shipping Research Institute Co., China

Scheme Design and Safety Analysis of Skidding Launching for Jackets of Large-Scale Offshore Converter Stations
Huachao Zhou, Peng Yang, Huazhong University of Science and Technology; Ming Liu, Wuhan Second Ship Design and Research Institute, China

75. POLAR TECH III: Arctic Operation 2

Wednesday June 3 14:00 Salon VI
Chair: Ian D. Turnbull, C-CORE, Canada

Optimization of Facility Side-Tracking for Iceberg Management using Machine Learning
Ian D. Turnbull, Tony King, C-CORE, Canada

Research on Prediction of the Umbilical Cable Form of ROV for Observing the Underside of the Ice Layer
Qingzhi Tang, Kaihua Liu, Peng Chen, Xiaobing Kong, Jie Liu, Marine Design & Research Institute of China, China

AUV-based Observation in the Arctic Ocean
Kiyotaka Tanaka, Hiroshi Yoshida, Shojiro Ishibashi, Tatsuhiro Fukuba, Makoto Sugesawa, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan

76. AST X: Ship Hull Design and Building 3

Wednesday June 3 14:00 Salon II
Chair: Seung Ho Ham, Changwon National University, Korea

Risk-Aware Bow Optimization Using Bayesian-Enhanced Surrogate Modeling
Qingwen He, Yanping He, Xin Yu, Zhe Chen, Jianmei Chen, Yupei Ren, Shanghai Jiao Tong University, China

A Study on the Coordination between Shipbuilding Efficiency and Shafting Design
Jian Lu, Zhaoqiang Wang, Yan Yin, Zhangjian Wang, Weiwen Kong, Hao Huang, Shanghai Waigaoqiao Shipbuilding Co, China

Automated Design System for Hull Deformation Control Using Measurement Database
Jaehee Kim, Bong-Gook Kang, Dong-Ju Lee, HD Korea Shipbuilding & Offshore Engineering Co, Korea

Development of High-Speed 3D Hull Form and Compartment Reconstruction Algorithm Based on Limited 2D Drawing Data
Bo Sung Jung, Seung Ho Ham, Seung Min Oh, Changwon National University; Sol Ha, Mokpo National University, Korea

Research on Ship Hull Optimization via Parametric Deformation and Neural Networks
Chen Zhou, Shixi Guo, Zhouyuan Xu, Dapeng Zhang, Gaoshuai Wang, Siying Wu, Shanghai Waigaoqiao Shipbuilding Co, China

A Ship Hull Concept Design and Optimization Method with 3D Model Generators
Ziyi Chen, Ningbo University; Yongxing Zhang, Dong Jiang, Nanjing Tianfu Software; Lin Du, Yongyu Huang, Lingwei He, Ningbo University, China

77. COASTAL HYDRODYNAMICS V: Tidal 2

Wednesday June 3 14:00 Salon VII
Chair: Yuhua Zheng, Second Institute of Oceanography, MNR, China

Impact of Groin Shortening on Tidal Flat Morphodynamics in a Tide-dominated Estuary
Yuhua Zheng, Xiaoyan Li, Ming Gong, Second Institute of Oceanography, MNR; Fanjie Shen, Hohai University; Jiafa Shen, Second Institute of Oceanography, MNR, China

The Impact of Chamber Width in the Huangpu River Tidal Barrier on Channel Erosion and Deposition
Qing Zhang, Shanghai Water Engineering Design and Research Institute Co, China

Effects of Partially Removed Dam Remnants on Tidal and Flood Dynamics in a Macrotidal Estuary
E. N. Lakmali, K. Huguenard, University of Maine; Stendert Laan, Deltares USA, USA; D.P.C Laknath, Lanka Hydraulic Institute Ltd, Sri Lanka

Experimental Study on Surface Pressure and Force Distribution of a Slope under Tidal Bore Action [Proceedings only]
Tao Jiang, Xiaodan Mao, National Engineering Research Center for Dredging Technology and Equipment Co; Jian Zeng, Gang Chen, Zhejiang Institute of Hydraulics and Estuary; Zeng Zhou, Hohai University, China

78. MECHANICS & MATERIALS IV: Impact, Collision

Wednesday June 3 14:00 Salon III
Chair: Samuel Pruvost, BWIDEOL, France

Full Mission Bridge Simulator Testing of a Decision Support System for Collision Avoidance using a Human-in-the-Loop Technique
Mikolaj Bartkowski, University of Genova, Italy; Srdan Žuškin, University of Rijeka, Croatia; Raphael Zaccone, Michele Martelli, University of Genova, Italy

Vibroacoustic Characteristics of a Double-Panel Structure with Auxetic Metamaterial Ribs

Zhaolong Zhang, Wen Wang, Chuangchuang Li, Sun Li, Marine Design and Research Institute of China, China

Formation Mechanism of High-pressure Shock on Wall Induced by Titanium Alloy Pressure Hull Implosion under Deep-sea Ocean
Jiancai Zheng, Jixie Huang, Yuhao Gao, Min Zhao, Shanghai Jiao Tong University, China

Active Early Warning System For Bridge Piers Against Ship Collision Base on Digital Twin
Xin Guo, Minhui Zhao, Shanghai Maritime University; Feidi Li, Ningbo Dagang Pilotage Co; Yihua Liu, Eastern Institute of Technology, China

Ship Collision Mitigation and Crashworthiness Analysis of a Concrete Barge Floating Foundation
Samuel Pruvost, Adrien Courbois, BW IDEOL, France; Lucas Márquez, Gabriel Vandegar, Université de Liège, Belgium

Path Tracking and Dynamic/Static Collision Avoidance for Unmanned Surface Vehicles Based on Optimized Vector Field Guidance Law
Xianrui Hou, Chengzhi Wu, Shanghai Maritime University; Yi Liu, Marine Design and Research Institute of China, China

79. TBD

Wednesday June 3 14:00 Salon VIII
Chair:

80. HPM V: EAC

Wednesday June 3 14:00 Narcissus
Chair: Hyun Jo Jun, ExxonMobil, USA
Co-Chair: Zachary N. Buck, Nicholas Derimow, Newell Moser, Damian Lauria, NIST, USA

Continued in 16:20 session (same room)

Investigation of Crack Initiation and Growth of Hydrogen-Charged Steel during In-Situ Fracture Toughness Testing Using High Energy X-Ray Diffraction
Zachary N. Buck, Nicholas Derimow, Newell Moser, Damian Lauria, NIST; Victoria Cooley, Jun-Sang Park, Argonne National Laboratory; Robert Amaro, Advanced Materials Testing & Technologies; Matthew J. Connolly, NIST, USA

Microstructural Influences on Environmental Degradation in Pipeline Steels for Hydrogen and Carbon Dioxide Transportation
Lawrence Cho, Santigopal Samanta, Andrew LeBoeuf, Emma Coatney, Colorado School of Mines; May Martin, Andrew Slifka, National Institute of Standards and Technology (NIST); Joseph

Ronevich, Chris San Marchi, Sandia National Laboratories; Kip Findley, Colorado School of Mines, USA

Hydrogen-induced Degradation of Tensile, Impact and Hardness Properties of API 5L X52 Pipeline Steel
Erange Guruge, Nirosha D. Adasooriya, Dimitrios Pavlou, University of Stavanger, Norway

Materials Integrity Challenges in CO_2 Pipelines with Hydrogen Impurity: Implications for CCS Infrastructure [Oral presentation]
Hyun Jo Jun, ExxonMobil Technology and Engineering Company, USA

Microstructural Control for Low-Temperature Toughness in Sour-Resistant Grade X65 Linepipe
Daichi Izumi, Hikaru Imayama, Yuta Tamura, Itaru Samusawa, Takaki Fujiwara, Yuta Morimoto, Nobuyuki Ishikawa, JFE Steel Corporation, Japan

Mechanistic Evaluation of Stress Grooving and Crack Initiation in TMCP X65 Steels under Sour Service Conditions [Oral presentation]
Hyun Jo Jun, Thirumalai Neeraj, ExxonMobil Technology and Engineering Company, USA

Are Stress Grooves a Precursor for SSC?
Angeire S Huggins, Ramgopal Thodla, DNV, USA; Agnes Horn, DNV Norway, Norway; Jens P. Tronskar, DNV Singapore, Singapore

81. TBD

Wednesday **June 3** **14:00** **Orange Blossom**
Chair:

WEDNESDAY 16:20

82. HYDRODYNAMICS XI: LH2 Sloshing and Heat Transfer

Wednesday **June 3** **16:20** **Salon I**
Chair: Seongmin Woo, Samsung Heavy Industries, Korea

Analysis of the Influence of Hole Distribution Pattern in Perforated Anti-Sloshing Baffles on Sloshing Suppression Performance in Type C Tanks
Lihan Hai, Zhangjian Wang, Gang Chen, Mei Xue, Lin Zhao, Shanghai Waigaoqiao Shipbuilding Co, China

Numerical Analysis of LH2 Sloshing Heat Transfer Phenomena
André Baeten, Somayeh Baeten, Augsburg University of Applied Sciences, Germany

Physics-informed Neural Network for Flow Field Reconstruction and Prediction in a Sloshing Tank
Seongmin Woo, Rae Hyoung Yuck, Yong Chul Lee, Samsung Heavy Industries; Daegyoum Kim, KAIST, Korea

83. POLAR TECH IV: Arctic Ocean and Under-Ice Drone
Wednesday June 3 16:20 Salon VI
Chair: Matthew King, National Research Council Canada

Development and Field Demonstration of the Autonomous Under-Ice Observation Drone COMAI in the Arctic Ocean
Shojiro Ishibashi, Kiyotaka Tanaka, Makoto Sugesawa, Hiroshi Yoshida, JAMSTEC, Japan

Specimen Dimensions Effects on the Mechanical Response of Sea Ice in Three-point Bending
Aobo Zhang, Biye Yang, Guiyong Zhang, Borui Yang, Dalian University of Technology; Xi Yang, The Hong Kong Polytechnic University; Congyi Huang, Dalian University of Technology, China

Dynamics, Ecological Risks, and Adaptive Management of Bohai Sea Ice Under Climate Change [Proceedings only]
Xueqin Liu, Shuai Yuan, Yujin Zhang, Yu Wang, National Marine Environmental Monitoring Center, China

A Prototype Winter Road Surveying System
Matthew King, Robert Briggs, National Research Council Canada; Carl Thibault, MakeTech Aerospace, Canada

Dynamic Positioning for Icebreaking Ships [Oral presentation]
Samuli Hanninen, Heikki Laitasalmi, Jorma Koponen, Kalevi Tervo, Ola Hjukse, Alina Colling, Torsten Heideman, ABB OY Marine and Ports, Finland

Optimization Design of Ice Zone Structure for Polar Oil Tankers Based on Multi-Objective Balance
Xin Zhao, Xiaocai Hu, Gang Chen, Yan Yin, Lixian Sheng, Xishi Guo, Shanghai Waigaoqiao Shipbuilding Co, China

Long-term Assessment of Extreme Winds in the Northern South China Sea
Haiyue Tan, Qingguo Yuan, Qi Zhang, Hanqiong Zuo, CNOOC Research Inst. Ltd, China

Monitoring Atmospheric Icing on Infrastructure Using the IceTroll Sensor and Image Analysis
Yngve Birkelund, Pravin Punde, UiT The Arctic University of Norway; John Magne Gitmark, Bjørn Egil Nygaard, Norconsult, Norway

84. AST XI: Green Operation 1: AI, Machine Learning 1
Wednesday June 3 16:20 Salon II

Chair: Hongliang Chen, CCCC Nat'l Eng. Research Ctr of Dredging, China

An Improved YOLOv7 Model for Detecting Hazardous Scenarios
Anzhu Sun, Kang Chen, Cheng Cheng, Peng Zhang, Ze Sun, China Ship Scientific Research Center, China

Study on the Generalization of Machine Learning Model for Predicting Floating Offshore Wind Turbine Motions [Proceedings only]
Qing Dong, Hao Zhou, China Ship Scientific Research Center; Yue Liu, Taihu Laboratory of Deepsea Technological Science; Kai Zhang, Hua Zhang, China Ship Scientific Research Center; Hanyu Liu, Shanghai Jiao Tong University, China

A UAV-Vision-Based System for Automated Docking of Bow Discharge Connections in Trailing Suction Hopper Dredgers
Hongliang Chen, Yi Wu, Hongsheng Zhang, CCCC National Engineering Research Center of Dredging, China

Study of the Influence of Hydrofoil AOA on Hydrodynamic Noise Sources
Chao Chen, Shanghai Jiao Tong University; Chen Niu, Wuhan Second Ship Design and Research Inst.; Yuan Zhuang, Decheng Wan, Shanghai Jiao Tong University, China

85. COASTAL HYDRODYNAMICS VI: Breakwater

Wednesday June 3 16:20 Salon VII

Chair: Naoyuki Inukai, Nagaoka University of Technology, Japan

Study on the Identification of Rip Current Occurrence Areas under Low-Wave Conditions Using Deep Learning Based Image Recognition
Naoyuki Inukai, Nagaoka University of Technology; Shuto Tanabe, CTI Engineering Co., Japan

Hydrodynamic Numerical Simulation Study of a Pile-Supported Double Pontoon Breakwater with a Horizontal Perforated Plate
Shuyue He, Yuhang Wang, Liuyi Huang, Ocean University of China, China

Wave Overtopping Assessment of Wave-Dissipating and Vertical Seawalls via Model Experiments and CADMAS-SURF Simulations
Aye Nyein Mon, Jun Mitsui, Shin-ichi Kubota, Fudo Tetra Corporation, Japan

Experimental Study on Bed Sediment Erosion Process Under Different Mud-sand Mixing Ratios
Feng Li, Xiangjie Zhu, Yangtze River Waterway Bureau; Qi Shen, Shanghai Estuarine and Coastal Science Research Center; Xiaoxiao Wu, Shanghai Maritime University; Baoling Wang, Yangtze River Waterway Bureau, China

Hydrodynamic Performance of Wave Focusing in Front of a 3D Arc-shaped Seawall
Haoyu Deng, Jinxuan Li, Dalian University of Technology; Guannan Wang, The Hong Kong University of Science and Technology; Lei Wang, Shantou University; Zhuowei Zhou, Wenbo Gao, Quanke Su, The Hong Kong University of Science and Technology, China

Physics-Guided Fourier Graph Network for Robust Storm Surge Forecasting
Xinxin Yue, Yi Zhang, Zijue Wang, Southeast University; Xiying Cheng, Anhui Science and Technology University; Ji Shi, Tsinghua University, China

Research on Settlement Prediction of Bucket-base Structure Wharf during Construction Period Based on ARIMAX and VAR Models
Jiayi Lin, Shanghai Traffic Construction Engineering Safety and Quality Supervision Station; Yao Ju, Yangtze Estuary Waterway Administration Bureau, China

86. TBD

Wednesday	**June 3**	**16:20**	**Salon III**
Chair:			

87. TBD

Wednesday	**June 3**	**16:20**	**Salon VIII**
Chair:			

88. HPM V: EAC (Continued from 14:00)

Wednesday	**June 3**	**16:20**	**Narcissus**
Chair:			

HPM V: EAC Continued

89. TBD

Wednesday	**June 3**	**16:20**	**Orange Blossom**
Chair:			

THURSDAY 08:00

90. HYDRODYNAMICS XII: VIV

Thursday	**June 4**	**08:00**	**Salon I**

Chair: Adnan Munir, Western Sydney University, Australia

Numerical Investigation of the Flow around a Hydrofoil with a Flexible Coating Based on Two-way Fluid-structure Interaction
Qiang Liu, Ziru Li, Wei He, Wuhan University of Technology, China

Vortex-induced Vibration Responses and Lock-in Behavior of a Steel Lazy-wave Riser under Multi-directional Currents
Zhenhua Li, Jian Su, Universidade Federal do Rio de Janeiro; Carlos E. Silva, José L. D. Alves, Leandro Gazoni, Universidade Federal do Rio de Janeiro, Brazil; Yangye He, China University of Petroleum-Beijing, China

Vortex-induced Vibration of a Circular Cylinder Mounted by a Spring with Dynamic Stiffness
Jingyang Li, Cheng Zhang, South China University of Technology, China

Amplitude Amplification Effect of Transverse Vibration Induced by In-Line Periodic Motion of a Rigid Cylinder
Haoyu Qian, Guoqing Jin, Zongbing Yu, Li Zou, Jian Hu, Qi Guo, Dalian University of Technology; Hao Zheng, State Key Laboratory of Exploitation and Utilization of Deep Sea Mineral Resources, China

Flow Induced Vibrations of Rotating Circular Cylinder in Transverse Direction at Re = 5000 under Oscillatory Flow
Muhammad Umair Hassan, National University of Science and Technology, Pakistan; Adnan Munir, Ming Zhao, Western Sydney University, Australia; Ubaid Ur Rehman, National University of Science and Technology, Pakistan; Muhammad Hamza Ali, University of Illinois at Urbana-Champaign, USA; Muhammad Kashif, National University of Science and Technology, Pakistan

Numerical Study on the Mechanism of Underwater Fluctuating Pressure Induced by Vortex Shedding from a Vertical Cylinder
Lianjie Yu, Qi Shen, Jin Liu, China Ship Scientific Research Center; Decheng Wan, Shanghai Jiao Tong University, China

91. POLAR TECH V: Workshop

Thursday **June 4** **08:00** **Salon VI**
Chair: Ivana Kubat, National Research Council Canada, Canada

92. AST XII: Green Operation II: AI, Machine Learning 2

Thursday **June 4** **08:00** **Salon II**
Chair: Geonwoo Kim, KRISO, Korea
Co-Chair: Angelo Macocco, Fincantieri S.p.a., Italy

AI-Enhanced Data Quality Assurance and Validation for Multi-Terminal Systems in Large Cruise Ships
Haohan Shen, Ke Wang, Kai Wang, Ji Zeng, Shanghai Maritime University/ Shanghai Waigaoqiao Shipbuilding Co, China

Data Standardization and Communication Protocol Research in Large Cruise Ship System Verification
Ke Wang, Jun Sheng, Jianhua Deng, Yiting Zhan, Shen Niu, Xiaokai Zhang, Shanghai Maritime University, China

Robotic Vision and Deep Learning for Compliance Verification of Safety Criteria in Ship Escape Passages
Hongtao Chen, Shanghai Maritime University; Jianguo Chen, Shanghai Waigaoqiao Shipbuilding Co.; Jiahao Chen, Pan Gao, Di Li, Shanghai Maritime Unviersity; Wen Cai, Shanghai Waigaoqiao Shipbuilding Co, China

Design and Implementation of a Multi-Ship Remote Operation System with a Hybrid Testbed
Geonwoo Kim, Geun-Tae Yim, Korea Research Institute of Ships and Ocean Engineering, Korea

Development of a Dual-Purpose LNG/LH_2 Storage and Handling Systems for Application on Board Cruise Ships
Luca Micoli, Angelo Macocco, Tommaso Coppola, Fincantieri S.p.a., Italy

Numerical Investigation of a KCS Ship Berthing and Unberthing Based on the Overset Grid Method
Sinian Li, Zhihao Wang, Jianhua Wang, Decheng Wan, Shanghai Jiao Tong University, China

93. COASTAL HYDRODYNAMICS VII: Workshop
Thursday June 4 08:00 Salon VII
Chair: Luca Martinelli, Universita di Padova, Italy

94. HPM VI: Workshop
Thursday June 4 08:00 Narcissus
Chair: HyunWoo Jin, ExxonMobil Technology & Engineering Co., USA

THURSDAY 10:30

95. HYDRODYNAMICS XIII: Workshop
Thursday June 4 10:30 Salon I
Chair: Decheng Wan, Shanghai Jiao Tong University, China

96. AST XIX: Workshop
Thursday June 4 10:30 Salon II
Chair: TBD