

Techno-Ocean 2016 Technical Session

Preliminary Program

Thursday, October 6 14:45 - 16:45

Ocean and Space Technology Collaboration

1A.1	Iridium Contributes to “Maritime Safety” ----- Kazuhiro Sekiguchi Iridium Communications
1A.2	Design and Evaluation of Offshore Marine Protected Areas ----- Hiroyuki Matsuda ¹ , Yuta Takemoto ¹ , Toshio Katsukawa ² Yokohama National University, ² Tokyo University of Fisheries and Marine Engineering
1A.3	Satellite Based Bathymetry Measurements in Shallow Water ----- Tatsuyuki Sagawa ¹ , Eiichi Sakata ¹ , Yoshihiro Matsumoto ² , Tunehiro Hiraiwa ³ Remote Sensing Technology Center of Japan, ² Japan Coast Guard , ³ Japan Hydrographic Association
1A.4	Expectation of Next Generation Satellite Data Analysis for the Coastal Environment ----- Yuji Sakuno ¹ Hiroshima University
1A.5	Ice Navigation Performance Analysis Using Satellite Data ----- Genki Sagawa ¹ Weathernews Inc.
1A.6	Analyses of Green Island Wake Caused by Kuroshio from Satellite Imagery ----- Kai-Ho Cheng ¹ , Chung-Ru Ho ¹ , Po-Chun Hsu ¹ National Taiwan Ocean University

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Marine Mineral Resource Development

1B.1	<p>An Exploration of Hydrothermal Deposits by Using a Deep Towed Sensor Suite in and around the Iheya Small Ridge</p> <p>Ryuji Kubota¹, Atsushi Oshida¹, Haruo Harada², Masahiro Ohhara³, Kentaro Hashimoto⁴, Toshimitsu Gotoh⁵, Toshihisa Kawaida⁶, Katsunori Okumura⁷, Takeya Matsuda⁸</p> <p>Kawasaki Geological Engineering Co., Ltd., ²Mitsui Mineral Development Engineering Co., Ltd., ³Kaiyo Engineering Co., Ltd., ⁴Ocean Engineering Corporation, ⁵PASCO Corporation, ⁶Aero Asahi Corporation, ⁷Sanyo Techno Marine Co., Ltd., ⁸Kokusai Kogyo Co., Ltd.</p>
1B.2	<p>Development of Seafloor Mineral Processing for Seafloor Massive Sulfides</p> <p>Yasuharu Nakajima¹, Takumi Sato², Blair Thornton², Gjergj Dodbiba², Toyohisa Fujita²</p> <p>National Maritime Research Institute, ²The University of Tokyo</p>
1B.3	<p>Development of an Underwater Gravity Measurement System with Autonomous Underwater Vehicle for Marine Mineral Exploration</p> <p>Takemi Ishihara¹, Masanao Shinohara¹, Akito Araya¹, Tomoaki Yamada¹, Hiromi Fujimoto², Toshihiko Kanazawa³, Kenji Uehira³, Masashi Mochizuki³, Satoshi Tsukioka⁴, Shinobu Omika⁴, Tsuyoshi Yoshiume⁴, Kokichi Iizasa¹</p> <p>The University of Tokyo, ²Tohoku University, ³National Research Institute for Earth Science and Disaster Prevention, ⁴Japan Agency for Marine-Earth Science and Technology</p>
1B.4	<p>New Marine Seismic Survey Techniques for Seafloor Massive Sulphide (SMS) Exploration</p> <p>Eiichi Asakawa¹, Fumitoshi Murakami¹, Hitoshi Tsukahara¹, Shutaro Saito¹, Sangkyun Lee¹, Kenji Tara²</p> <p>JGI Inc., ²The University of Tokyo</p>
1B.5	<p>Development of the Cultivation System for Seafloor Hydrothermal Deposit</p> <p>Keita Akiyama¹, Masanori Kyo¹, Tomokazu Saruhashi¹, Noriaki Sakurai¹, Takahiro Yokoyama¹, Tatsuo Nozaki¹, Masayuki Watanabe¹, Yuka Masaki¹</p> <p>Japan Agency for Marine-Earth Science and Technology</p>
1B.6	<p>Re-Entry Support System for Deep Sea Drillings</p> <p>Yasuhiro Namba¹, Junya Ishiwata¹, Masanori Kyo¹</p> <p>Japan Agency for Marine-Earth, Science and Technology</p>

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Coastal and Ocean Space Utilization

1C.1	Water Purification in Fresh-Water-Lake Adjacent to Sea Using Tidal Energy <hr/> <p>Hiroshi Isshiki¹, Kenji Sawai², Rho-Taek Jung³ Institute of Mathematical Analysis, ²Setsunan University, ³University of Ulsan</p>
1C.2	A Fundamental Study on Application to Collision Analysis of Tsunami Drifting Ship by the MPS Method <hr/> <p>Kazuki Murata¹, Koichi Masuda¹, Tomoki Ikoma¹, Hiroaki Eto¹ Nihon University</p>
1C.3	Hydraulic and Numerical Studies on Breakwaters and Additional Functions <hr/> <p>Hiroyuki Oyama¹, Masayuki Shimizu¹, Toru Sato¹ The University of Tokyo</p>
1C.4	Effect of Coal Loading Conditions on Elastic Response of LFTS (Large-Scale Floating Transshipment Station for Loading Coal) <hr/> <p>Hiroaki Eto¹, Chiaki Sato¹, Tomoki Ikoma¹, Koichi Masuda¹, Tomoyuki Kishida¹, Mitsuru Kubota¹ Nihon University</p>
1C.5	Thermal Stability and Corrosion Studies of Amines for Combined Acid Gas Removal and Hydrate Control for Subsea Gas Treatment Systems <hr/> <p>Usman Shoukat¹, Georgios Fytianos¹, Hanna K. Knuutila¹ Norwegian University of Science and Technology</p>

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Sensor and Observing Instruments 1

1D.1	A Data Compression Method by Dropping Most Significant Bits and its Application to Transmission of Position Data <hr/> <p>Takahiro Seta¹ National Maritime Research Institute</p>
1D.2	Experimental Results of OFDM Rake Reception for Shallow Water Acoustic Communication <hr/>

	Shingo Yoshizawa ¹ , Hiroshi Tanimoto ¹ , Takashi Saito ² Kitami Institute of Technology, ² Mitsubishi Electric TOKKI Systems Corporation
1D.3	A Profiler for Underwater Optics Takao Sawa ¹ , Naoki Nishimura ² , Takeyoshi Kumagai ³ , Akio Ichikawa ⁴ , Shinpei Goto ⁵ Japan Agency for Marine-Earth Science and Technology, ² Shimadzu Corporation, ³ SAS Co., Ltd., ⁴ Inter Energy Co., Ltd., ⁵ Tokyo University of Marine Science and Technology
1D.4	Obstacle Avoidance Method Appropriate for the Steep Terrain of the Deep Seafloor Akihiro Okamoto ¹ , Masahiko Sasano ¹ , Takahiro Seta ¹ , Shogo Inaba ¹ , Katsuhiro Sato ¹ , Kenkichi Tamura ¹ , Yuya Nishida ² , Tamaki Ura ² National Maritime Research Institute, ² Kyushu Institute of Technology
1D.5	Experimental Evaluation of the Generalized Cross-Correlation Method on Binary and Polyphase Sequences for Underwater Acoustic Communications Joaquín Aparicio ¹ Japan Agency for Marine-Earth Science and Technology
1D.6	Deep Net Localization - Eavesdropping in Mobile Acoustic Underwater Sensor Networks Sergej Neumann ¹ , David Oertel ¹ , Heinz Wörn ¹ Karlsruhe Institute of Technology

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Surface and Deep Seawater Utilization

1E.1	Status of the “Kumejima Model” for Advanced Deep Seawater Utilization Benjamin Martin ¹ , Shin Okamura ¹ , Yukio Nakamura ² , Takeshi Yasunaga ³ , Yasuyuki Ikegami ³ Xenesys Inc., ² Kumejima Town, ³ Saga University
1E.2	Economic and Environmental Evaluations for Multi-Purpose Utilizations of Deep Ocean Water in Hateruma Island, Japan Koji Otsuka ¹ , Keisuke Iio ² Osaka Prefecture University, ² Iwatani Gas Corporation Ltd.
1E.3	Ocean Upwelling System Utilizing Energy of Surface Waves Alexander V. Soloviev ¹

	Nova Southeastern University
1E.4	<p>Numerical Simulations for Behavior of Discharged Water from Ocean Thermal Energy Conversion Plant</p> <p>-----</p> <p>Zhe Wang¹, Shigeru Tabeta¹, Yuka Kitakoji², Shin Okamura³ The University of Tokyo, ²Japan Marine United Corporation, ³Xenesys Inc.</p>
1E.5	<p>The Real Sea Experiment of Seaweed Growing with DOW</p> <p>-----</p> <p>Kazuyuki Ouchi¹, Shigeru Tabeta², Midori Kurahashi², Kazuo Iseki³, Masanobu Shibuya⁴ Ouchi Ocean Consultant, Inc., ²The University of Tokyo, ³Hiroshima University, ⁴Shibuya Diving Industry Co. Ltd.</p>
1E.6	<p>Cell Viability of Human Fibroblasts Cultured with Various Ratios of Calcium and Magnesium and Effects of Deep Seawater Supplementation</p> <p>-----</p> <p>Katsuhisa Yamada¹, Masahiro Suzuki¹, Michiyasu Nomura¹, Yuji Shibata², Chiaki Imada² DHC Corporation, ²Tokyo University of Marine Science and Technology</p>

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Fisheries Engineering and Resource Utilization

1F.1	<p>Study on the Formulation of Fish Population Dynamics Model Using Statistical Data</p> <p>-----</p> <p>Yuqiong Qin¹, Naoki Nakatani¹, Yohei Tsukahara² Osaka Prefecture University, ²National Research Institute of Far Seas Fisheries</p>
1F.2	<p>Velocity Measurement of the Flow Field in Rearing Tank Using Particle Imaging Velocimetry</p> <p>-----</p> <p>Tetsuya Sumida¹, Koichi Tsubogo², Wataru Yamazaki³ National Institute of Technology, Oshima College, ²The Open University of Japan, ³Nagaoka University of Technology</p>
1F.3	<p>Design Concept of a Japanese Purse Seiner by Using System Engineering Process</p> <p>-----</p> <p>Jun Miyoshi¹, Junji Kawasaki² National Research Institute of Fisheries Engineering, ²National Fisheries University</p>
1F.4	<p>Measuring Method Hull of Small Fishing Boats by Using Laser Telemeter Considering Use of NURBS to Draw Hull Lines</p> <p>-----</p>

	<p>Junji Kawasaki¹, Jun Miyoshi² National Fisheries University, ²National Research Institute of Fisheries Engineering</p>
1F.5	<p>Research and Analysis of Hull Form of Small Fishing Vessels in Southeast Asia</p> <hr/> <p>Tadahiro Kawata¹, Jun Miyoshi², Suthipong Thanasansakorn³ Japan Craft Inspection Organization, ²National Research Institute of Fisheries Engineering, ³Southeast Asia Fisheries Development Center</p>
1F.6	<p>Development of a Pinger for Classification of Feeding Behavior of Fish Based on Axis-Free Acceleration Data</p> <hr/> <p>Jun Horie¹, Toyoki Sasakura¹, Nobuaki Arai^{2,3}, Jun Horie¹, Yusuke Ina¹, Yuichiro Mashino¹, Hiromichi Mitamura^{1,3}, Kazuyuki Moriya¹, Takuji Noda⁴ AquaSound Inc., ²Kyoto University, ³CREST, Japan Science and Technology Agency, ⁴The Institute of Statistical Mathematics</p>

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Ocean Energy Development 1

2A.1	<p>Prediction of the Flow around a Floating Axis Marine Current Turbine</p> <hr/> <p>Hiromichi Akimoto¹, Kazuhiro Iijima¹, Yutaka Hara² Osaka University, ²Tottori University</p>
2A.2	<p>Influence of HAMT Array of Using CFD with Fan and Porous Media</p> <hr/> <p>Yuka Watanabe¹, Tomoki Ikoma¹, Koichi Masuda¹, Hiroaki Eto¹ Nihon University</p>
2A.3	<p>Structural Modeling for Flexible Floating Offshore Wind Turbine - Flexible Model vs Rigid Model -</p> <hr/> <p>Kazuhiro Iijima¹, Sharath Srinivasamurthy¹, Masahiko Fujikubo¹ Osaka University</p>
2A.4	<p>Analytical Solution for the Dynamic Behavior of Surface Casing</p> <hr/> <p>Marcio Yamamoto¹, Hideyuki Suzuki¹, Ken Takagi¹, Ryota Wada¹ The University of Tokyo</p>

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Ocean Observing Platforms 1

2B.1	A Low Cost USV for Aqua Farm Inspection <hr/> <p>Ottar L. Osen¹, Albert Havnegjerde¹, Vegard Kamsvåg¹, Sveinung Liavaag¹, Robin T. Bye¹ Norwegian University of Science and Technology</p>
2B.2	Development of Prototype Autonomous Surface Vehicle <hr/> <p>Tadahiro Hyakudome¹, Takao Sawa¹, Yoshiyuki Nakano¹, Yoshitaka Watanabe¹, Tatsuya Fukuda¹, Takeshi Nakatani¹, Hiroshi Matsumoto¹, Ryotaro Suga¹, Hiroshi Yoshida¹, Hiroshi Ochi¹, Takuya Shimura¹, Koji Meguro¹, Mitsuyasu Deguchi¹, Takashi Yoda¹ JAMSTEC</p>
2B.3	Autonomous Underwater Vehicle Equipped with Interferometric Real and Synthetic Aperture Sonar <hr/> <p>Kenji Nagahashi¹, Akira Asada¹, Katsunori Mizuno¹, Mitsuhiro Kojima¹, Fuyuki Katase¹, Yuta Saito¹, Tamaki Ura² The University of Tokyo, ²Kyushu Institute of Technology</p>
2B.4	Development of a Semi-Submersible Autonomous Surface Vehicle for Control of Multiple Autonomous Underwater Vehicles <hr/> <p>Masahiko Sasano¹, Shogo Inaba¹, Akihiro Okamoto¹, Takahiro Seta¹, Shinichi Sawada², Taku Suto², Kenkichi Tamura¹, Tamaki Ura¹ National Maritime Research Institute, ²IHI Corporation</p>

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Ocean Observing Platforms 2

2C.1	Real-GEMS: Development of Submarine Cabled Test Site to Evaluate an Environmental Monitoring Method in Hydrothermal Area <hr/> <p>Katsuyoshi Kawaguchi¹, Eiichiro Araki¹, Takashi Yokobiki¹, Jin-Kyu Choi¹, Shuhei Nishida¹, Takeshi Ohki¹, Tatsuya Mizukawa², Kenji Hishiki², Yasuo Aoki³ Japan Agency for Marine-Earth Science and Technology, ²NEC Networks & System Integration Corporation, ³NEC Magnus Communications, Ltd.</p>
2C.2	Evaluation of Availability on Passive Acoustic Devices on Underwater Platforms <hr/> <p>Ryuzo Takahashi¹, Tomonari Akamatsu², Daisuke Hasegawa², Takeshi Okunishi², Yuya Nishida³, Tamaki Ura³, Hiroshi Takahashi⁴, Masami Katsuragawa⁴ National Research Institute of Fisheries Engineering, ²National Research Institute of Fisheries Science, ³Kyushu Institute of Technology, ⁴Okamoto Glass Co., Ltd.</p>

2C.3	<p>Survey and Data Management Method Based on Geographic Information System for Cable Based Observatory Development</p> <p>-----</p> <p>Takeshi Ohki¹, Takashi Yokobiki¹, Hiroyuki Matsumoto¹, Shuhei Nishida¹, Tohru Kodera², Masayuki Toizumi², Katsuyoshi Kawaguchi¹</p> <p>Japan Agency for Marine-Earth Science and Technology, ²NIPPON MARINE ENTERPRISES, LTD.</p>
2C.4	<p>Power Distribution System for Multidisciplinary Seafloor Observatory Junction Box</p> <p>-----</p> <p>Kenji Hishiki¹, Noriyuki Fujiwara¹, Takeshi Katayama¹, Tatsuya Mizukawa¹, Katsuyoshi Kawaguchi², Takashi Yokobiki²</p> <p>NEC Networks & System Integration Corporation, ²Japan Agency for Marine-Earth Science and Technology</p>

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Marine Environmental Monitoring and Impact Assessment 1

2D.1	<p>Underwater Acoustic Observatories to Reduce Ship Noise Footprint A Risk Assessment Model to Mitigate the Impact of Shipping Noise on Marine Fauna</p> <p>-----</p> <p>Michel André¹, Mike van der Schaar¹, Antonio M. Sánchez¹, Eric Baudin¹, Thomas Folegot¹, Céline Rousset¹, Christian Audoly¹</p> <p>Technical University of Catalonia</p>
2D.2	<p>Underwater Observatory Lander for the Seafloor Ecosystem Monitoring using a Video System</p> <p>-----</p> <p>Tetsuya Miwa¹, Yukari Iino¹, Toshio Tsuchiya¹, Masami Matsuura², Hiroshi Takahashi³, Masami Katsuragawa³, Tatsuhiko Fukuba¹, Yasuo Furushima¹, Tatsuo Fukuhara¹, Tomohiko Fukushima¹, Hiroyuki Yamamoto¹</p> <p>Japan Agency for Marine-Earth Science and Technology, ²Nagasaki Marine Industry Cluster Promotion Association, ³Okamoto Glass Co., Ltd.</p>
2D.3	<p>Soundscape Characteristics of the Eastern Taiwan Strait Indo-Pacific Humpback Dolphin Habitat</p> <p>-----</p> <p>Shane Guan¹, Joseph F. Vignola¹, Tzu-Hao Lin², Lien-Siang Chou³</p> <p>The Catholic University of America, ²Soundscape Association of Taiwan, ³National Taiwan University</p>
2D.4	<p>Acoustic Presence of Finless Porpoises around the Kansai International Airport</p> <p>-----</p> <p>Kiyomi Nakamura¹, Yuji Hirakawa¹, Naoki Kamezaki¹, Takashi Nakata², Yusuke Ono³, Masaki Hatano⁴, Tomonari Akamatsu⁵</p>

Suma Aqualife Park, ²Ministry of Land, Infrastructure and Transport Kinki Regional Development Bureau, ³Kansai Airport, ⁴Kaizuka City Office, ⁵National Research Institute of Fisheries Science

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Oceanography and Education 1

2E.1	Using Lagrangian Coherent Structures to Identify Surface Oil Pathways in the Northern Gulf of Mexico <hr/> <p>Laura Hode¹, Stephan Howden¹ University of Southern Mississippi</p>
2E.2	Research on Filtration Methodology for Suspended Particulate in Marine Construction <hr/> <p>Makoto Abe¹, Takeshi Shinoda¹, Yuki Sakata¹, Yuichiro Tanaka² Kyushu University, ²Penta-Ocean Construction Institute of Technology</p>
2E.3	Bubble Curtain for Blocking Spilled Oil on Water Surface <hr/> <p>Isamu Fujita¹ Port and Airport Research Institute</p>
2E.4	Development of High Ability Removal Method to Radioactive Cesium Adsorped on Ocean Sludge by Using Micro Bubbles and Activating Microorganisms <hr/> <p>Kyoichi Okamoto¹, Tomoe Komoriya¹, Takeshi Toyama¹ Nihon University</p>

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Numerical Modeling and Simulation 1

2F.1	Tracking-Positioning of Sound Speed Profiles and Moving Acoustic Source in Shallow Water <hr/> <p>Xiaole Guo¹, Kunde Yang¹, Qiulong Yang¹, Shaohao Zhu¹, Ran Cao¹, Yuanliang Ma¹ Northwestern Polytechnical University</p>
2F.2	Underwater Sensors Localization with Matched Multipath Time Delay in the Deep Ocean <hr/> <p>Qiulong Yang¹, Kunde Yang¹, Jia Han², Xiaole Guo¹, Shaohao Zhu¹, Ran Cao¹ Northwestern Polytechnical University, ²Mailbox 2433 Beijing</p>
2F.3	Downscaled Prediction of Extreme Seasonal Climate over Southeast

	<p>Asia Using a Regional Climate Model</p> <p>Satyaban B. Ratna¹, J. V. Ratnam¹, Swadhin. K. Behera¹, Takeshi Doi¹, Toshio Yamagata¹ Japan Agency for Marine-Earth Science and Technology</p>
2F.4	<p>Impact of Ocean Coupling on Typhoon Prediction in High-Resolution Nonhydrostatic Global Model</p> <p>Wataru Sasaki¹, Ryo Onishi¹, Keiko Takahashi¹, Hiromitsu Fuchigami² Japan Agency for Marine-Earth Science and Technology, ²NEC Informatec Systems, Ltd.</p>

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Ocean Energy Development 2

3A.1	<p>Heave Motion and Electric Power of Multiple Cylinders for Wave Energy Converter Considering the Controlling Force</p> <p>Qiao Li¹, Motohiko Murai¹, Syu Kuwada¹ Yokohama National University</p>
3A.2	<p>Development of the Coastal Wave Power Generation Device</p> <p>Shogo Miyajima¹, Kunio Nakano², Toshihiko Maemura², Takashi Kawaguchi³ AKISIMA LABORATORIES (MITSU ZOSEN) INC., ²Mitsui Engineering and Shipbuilding Co., Ltd. , ³AQUSYS CORPORATION</p>
3A.3	<p>Direct Wave Power Transfer to Transmission Line under Varing Magnetic Field along Vibration Manipulation Function</p> <p>Shigeo Kotake¹, Hiroyuki Douchi¹, Yasuyuki Suzuki¹ Mie University</p>

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Sensor and Observing Instruments 2

3B.1	<p>Cabled Underwater Observatory for Long-Term Ecosystem Monitoring at Hydrothermal Site</p> <p>Tatsuhiro Fukuba¹, Tetsuya Miwa¹, Yasuo Furushima¹, Tatsuo Fukuhara¹, Hiroyuki Yamamoto¹ JAMSETC</p>
3B.2	<p>Improvement of in situ Glass Electrode pH Sensor for Seawater by Rapid Response Glass Electrode and Removable Ag/AgCl Electrode with Solid Reference Junction Using Vycor Glass</p>

	Kei Okamura ¹ , Takuroh Noguchi ¹ , Mayumi Hatta ¹ , Jun-ichiro Ishibashi ² Kochi University, ² Kyushu University
3B.3	Integration of <i>in-situ</i> Chemical Sensors and Ocean Observing Platforms ----- Kiminori Shitashima ¹ Tokyo University of Marine Science and Technology

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Ocean Observing Platforms 3

3C.1	Development of Underwater Glider for Long-Term Virtual Mooring - Aiming 6,000 m Depth with Ceramic Housing - ----- Kenichi Asakawa ¹ , Masahiko Nakamura ² , Yosaku Maeda ¹ , Tadahiro Hyakudome ¹ , Yasuhisa Ishihara ¹ JAMSTEC, ² Kyushu University
3C.2	Ocean Acoustic Observing Platforms for Marine Creatures around Japan ----- Tomonari Akamatsu ¹ , Ryuzo Takahasi ¹ , Tomohito Imaizumi ¹ , Katsuyoshi Kawaguchi ² , Ryoichi Iwase ² , Shuhei Nishida ² National Research Institute of Fisheries Science, ² Japan Agency for Marine-Earth Science and Technology
3C.3	A Cabled Observatory System for Integrated Long Term, High-Frequency Biological, Chemical, Physical Measurement for Understanding Planktonic Ecosystem ----- Hidekatsu Yamazaki ¹ , Scott Gallager ² , Mamoru Tanaka ¹ , Kunihisa Yamaguchi ³ Tokyo University of Marine Science and Technology, ² Woods Hole Oceanography Institute, ³ Tokyo Metropolitan Government
3C.4	Construction of DONET2 ----- Takashi Yokobiki ¹ , Jin-Kyu Choi ¹ , Shuhei Nishida ¹ , Hiroyuki Matsumoto ¹ , Eiichiro Araki ¹ , Katsuyoshi Kawaguchi ¹ , Narumi Takahashi ¹ , Shuichi Kodaira ¹ Japan Agency for Marine-Earth Science and Technology

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Marine Environmental Monitoring and Impact Assessment 2

3D.1	Remediation of Polycyclic Aromatic Hydrocarbons
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	<p>(PAH)-Contaminated Marine Sediment with Surfactants</p> <hr/> <p>Po-Chang Wu¹, Chih-Feng Chen¹, Cheng-Di Dong¹ National Kaohsiung Marine University</p>
3D.2	<p>Metal Accumulation in Aquaculture Organisms of Southwest Coast of Taiwan</p> <hr/> <p>XiangYing Chuang¹, ChiuWen Chen¹, YunRu Ju¹ National Kaohsiung Marine University</p>
3D.3	<p>Habitat Suitability Index Model for Neon Flying Squid Adding Its Stock Effect</p> <hr/> <p>Hikomichi Igarashi¹, Yoichi Ishikawa¹, Haruka Nishikawa², Norihisa Usui³, Mitsuo Sakai⁴, Sei-ichi Saitoh⁵, Yutaka Imamura⁶ Japan Agency for Marine-Earth Science and Technology, ²Japan Society for the Promotion of Science, ³Meteorological Research Institute, Japan Meteorological Agency, ⁴Tohoku National Fisheries Research Institute, ⁵Hokkaido University, ⁶Aomori Prefectural Industrial Technology Research Center</p>
3D.4	<p>Environmental Impact Assessment Technologies for Sub-Sea Geological CCS - Perspective of Prediction Models -</p> <hr/> <p>Toru Sato¹, Yuki Kano¹, Kentaro Kamada¹, Ayako Fukumoto¹, Takuya Nakashima¹, Yu Tao¹, Hiroyuki Oyama¹ University of Tokyo</p>

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Oceanography and Education 2

3E.1	<p>A Proposal for Extreme Statistics Using Annual Maximum Data with Trend of Increasing or Decreasing</p> <hr/> <p>Keiji Nakai¹, Noriaki Hashimoto², Koji Kawaguchi³, Kyoshi Nukada¹, Ryoichi Inoue¹ ECOH Corporation, ²Kyushu University, ³Port and Airport Research Institute</p>
3E.2	<p>Recognizing Fishing Activities via VMS Trace Analysis Based on Mathematical Morphology</p> <hr/> <p>Yuan Zong¹, Haiguang Huang^{1,2}, Feng Hong¹, Yong Zhen¹, Zhongwen Guo¹ Ocean University of China, ²Wenzhou Ocean and Fishery Vessel Safety Rescue Information Center</p>
3E.3	<p>Evaluating the Data Visualization for Demanding Marine Operations</p> <hr/>

	Xu Zhuge ¹ , Hao Wang ¹ , Girts Strazdins ¹ Norwegian University of Science and Technology
3E.4	A Novel Method for Long-Term Time Series Analysis of Significant Wave Height Byung Ho Kang ¹ , Tae Ho Kim ² , Gil Young Kong ² Underwater Vehicle Research Center, ² Korea Maritime and Ocean University

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Numerical Modeling and Simulation 2

3F.1	Submarine Liquefied Flow Dynamics: Impacts, Modeling and Validations Shinji Sassa ¹ Port and Airport Research Institute
3F.2	A Numerical Simulation of Drainage of Influent Water Caused by Tsunami at Kawauchi, Tokushima Junichi Taniguchi ¹ , Toshitaka Baba ¹ , Manabu Miyoshi ² , Hiroshi Aki ² Tokushima University, ² Nita Consultant Co., Ltd.
3F.3	Generation Mechanism of the Rip Current at the Semi-Enclosed Beach by the Groin Naoyuki Inukai ¹ , Takeshi Ootake ² , Yoshifumi Ejiri ³ , Hiroshi Yamamoto ¹ Nagaoka University of Technology, ² Ecoh Corporation, ³ Penta-Ocean Construction Co., LTD.
3F.4	Study on Subsea-Type Gas Production System for Extraction of Methane Hydrate under the Seabed Ryusei Kajiyama ¹ , Takeshi Shinoda ¹ , Ryosuke Koike ¹ Kyushu University

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Ocean Energy Development 3

4A.1	A Basic Study on the MPS Method Simulation for the Caisson OWC Type WEC in Regular Waves Yutaro Sasahara ¹ , Mitsuhiro Masuda ¹ , Kiyokazu Minami ¹ Tokyo University of Marine Science and Technology
4A.2	A Model Test of an OWC Type WEC Using Wave Dissipating

	<p>Double-Caissons in a Wave Tank</p> <hr/> <p>Tomoki Ikoma¹, Koichi Masuda¹, Kazuyoshi Kihara², Hiroaki Eto¹, Shogo Shibuya¹ Nihon University, ²M. M. Bridge Co. Ltd.</p>
4A.3	<p>Design of a Hydraulic Power Take-Off Test Rig for Wave Energy Converters</p> <hr/> <p>Yasutaka Imai¹, Shuichi Nagata¹, Tengen Murakami¹, Da-Wei Chen¹ Saga University</p>

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Sensor and Observing Instruments 3

4B.1	<p>Performance Analyses and Optimization of Real-Time Multi-Step GA for Visual-Servoing Based Underwater Vehicle</p> <hr/> <p>Khin Nwe Lwin¹, Kenta Yonemori¹, Myo Myint¹, Naoki Mukada¹, Mamoru Minami¹, Akira Yanou¹, Takayuki Matsuno¹ Okayama University</p>
4B.2	<p>FishDrop: Estimation of Reef Fish Population Density and Biomass Using Stereo Cameras</p> <hr/> <p>Prospero C. Naval, Jr.¹, Laura T. David¹ University of the Philippines</p>
4B.3	<p>Tidal Flat Observation and Monitoring Using Still Video and Network Cameras</p> <hr/> <p>Naoaki Tezuka¹, Motoharu Uchida¹, Toshihiro Shigeta¹, Tokihiro Fukatsu² National Research Institute of Fisheries and Environment of Inland Sea, ²National Agriculture and Food Research Organization</p>
4B.4	<p>Underwater Atomic Force Microscope: Instrumentation, Operation, and Measurements</p> <hr/> <p>Shuhei Nishida¹, Naoki Matsubara¹, Tatsuhiro Fukuba², Masanori Kyo², Teruo Fujii¹ The University of Tokyo, ²Japan Agency for Marine-Earth Science</p>

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Ocean Observing Platforms 4

4C.1	Distribution of Ambient Noise at Offshore Kii Peninsula by Using DONET <hr/>
	Ikuo Matsuo ¹ , Shuhei Nishida ² , Katsuyoshi Kawaguchi ² Tohoku Gakuin University, ² Japan Agency for Marine-Earth Science and Technology
4C.2	Real Time Detection and Localization System for Underwater Acoustic Signal with Cable Observatories in the West Pacific Ocean <hr/>
	Shuhei Nishida ¹ , Ryoichi Iwase ¹ , Katsuyoshi Kawaguchi ¹ , Ikuo Matsuo ² , Tomonari Akamatsu ³ Japan Agency for Marine-Earth Science and Technology, ² Tohoku Gakuin University, ³ National Research Institute of Fisheries Science
4C.3	Localization of Fin Whale Calls with a Cabled Ocean Bottom Seismometer off East Japan Pacific Ocean <hr/>
	Ryoichi Iwase ¹ Japan Agency for Marine-Earth Science and Technology
4C.4	Visualization of Fish Movement and Size Estimation of the Fish by Using Broadband Split-Beam Echo Sounder <hr/>
	Tomohito Imaizumi ¹ , Koki Abe ¹ , Ryuzo Takahashi ¹ , Ikuo Matsuo ² , Tomonari Akamatsu ³ National Research Institute of Fisheries Engineering, ² Tohoku Gakuin University, ³ National Research Institute of Fisheries Science
4C.5	Localization Method of Fish by Using Fish Call Sounds Recorded by Two Stereo Underwater Sound Recorders <hr/>
	Kazuki Yamato ¹ , Ikuo Matsuo ¹ , Ryuzo Takahashi ² , Naoto Matsubara ³ , Hiroki Yasuma ³ ¹ Tohoku Gakuin University, ² Japan Fisheries Research and Education Agency, ³ Hokkaido University

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4D.1	A Feasibility Study of Accurate 3D Measurement of Ships Using Dense Stereo Vision System <hr/>
	Yasuhiro Nomura ¹ , Shigehiro Yamamoto ¹ , Kotaro Yoshihara ² , Takeshi Hashimoto ³ Kobe University, ² Marine Technical College, ³ Shizuoka University
4D.2	Effective Energy-Saving Device of Eco-Ship by Using Wave Propulsion <hr/>

	Sheng-Wei Huang ¹ , Tsung-Lin Wu ¹ , Yu-Ting Hsu ¹ , Jen-Hwa Guo ¹ , Jing-Fa Tsai ¹ , Forng-Chen Chiu ¹ National Taiwan University
4D.3	An Experimental System for Measurement of Dynamics of Damaged Ships Akihiko Matsuda ¹ , Koki Kawamura ² , Hirotada Hashimoto ³ , Daisuke Terada ¹ National Research Institute of Fisheries Engineering, ² National Maritime Research Institute, ³ Kobe University
4D.4	Estimation of the Random Exciting Force Causing Parametric Roll Resonance Verification Based on Numerical Simulation Daisuke Terada ¹ , Akihiko Matsuda ¹ , Hirotada Hashimoto ² National Research Institute of Fisheries Engineering, ² Kobe University

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Oceanography and Education 3

4E.1	Underwater Archaeology and Museums as Transdisciplinary Platforms for Formal and Informal Maritime Education in Universities Jeng-Horng Chen ¹ National Cheng Kung University
4E.2	A Ten-Year Review on Building Marine Aspired Generations through Ship Model and Marine Vehicle Competitions Wen-Ling Hong ¹ , Jr-Ping Wang ¹ National Kaohsiung Marine University
4E.3	Experiment and Computation on the Development of Axisymmetric Gravity Currents Yosuke Sawano ¹ , Nobuhiro Baba ¹ Osaka Prefecture University
4E.4	Hydrographic Observations in the Japan Sea with an Underwater Glider Taku Wagawa ¹ , Yosuke Igeta ¹ , Naoto Honda ¹ , Shoko Abe ¹ , Masashi Ito ¹ , Takeshi Okunishi ² , Daisuke Hasegawa ² , Shigeo Kakehi ² , Takashi Setou ³ , Yugo Shimizu ³ Japan Sea National Fisheries Research Institute, ² Tohoku National Fisheries Research Institute, ³ National Research Institute of Fisheries Science

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Numerical Modeling and Simulation 3

4F.1	Modeling the Drift of Japan Tsunami Marine Debris (JTMD) An Application of High Computing Simulation and Data Assimilation <hr/> <p>Masafumi Kamachi¹, Yoichi Ishikawa¹, Hideyuki Kawamura², Nikolai Maximenko³, Jan Hafner³, Amy MacFadyen⁴ JAMSTEC, ²JAEA, ³University of Hawaii, ⁴NOAA</p>
4F.2	Wave Run up Dynamics at Jogehama Beach <hr/> <p>Naoyuki Inukai¹, Kazuki Ogawa², Yoshifumi Ejiri³, Takeshi Ootake⁴, Hiroshi Yamamoto¹ Nagaoka University of Technology, ²East Japan Railway Company, ³Penta-Ocean Construction Co., LTD., ⁴Ecoh Corporation</p>
4F.3	Calculation of Wave Transformation Conducted by a Coupling between Boussinesq Model and Energy Balance Equation Model <hr/> <p>Katsuya Hirayama¹ Port and Airport Research Institute</p>
4F.4	Numerical Study on Wave Run-Up Height and Depression Depth around a Vertical Circular Cylinder at Various Froude Numbers <hr/> <p>Xiaoxi Xiao¹, Tahsin Tezdogan¹, Atilla Incecik¹ University of Strathclyde</p>

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Numerical Modeling and Simulation 5

5A.1	Seepage Flow Analysis on Caisson-Type Breakwater Reinforced with Sheet Piles by Using the SPH Method <hr/> <p>Tetsuro Goda¹, Mitsuteru Asai¹ Kyushu University</p>
5A.2	Numerical Modeling of Sound Propagation over Various Gradient Continental Slopes <hr/> <p>Ran Cao¹, Kunde Yang¹, Yuanliang Ma¹, Qiulong Yang¹, Shaohao Zhu¹ Northwestern Polytechnical University</p>
5A.3	Possible Variations in Interplate Coupling Preceding the next Nankai Trough Earthquake <hr/> <p>Mamoru Hyodo¹, Takane Hori¹ Japan Agency for Marine-Earth Science and Technology</p>

5A.4	<p>Development of High-Performance Finite-Element Solver and Application to Seismic Ground Strain Analysis of Tokyo</p> <hr/> <p>Kohei Fujita¹, Tsuyoshi Ichimura², Muneo Hori^{1,2} RIKEN, ²The University of Tokyo</p>
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Sensor and Observing Instruments 4

5B.1	<p>Practical Marine TDEM Systems Using ROV for the Ocean Bottom Hydrothermal Deposits</p> <hr/> <p>Keiko Nakayama¹, Akira Saito¹ Waseda University</p>
5B.2	<p>Method of the Side-Lobe Suppression without the Main-Lobe Widening for Linear Array Beam-Forming</p> <hr/> <p>Songwen Li^{1,2} Science and Technology on Underwater Acoustic Antagonizing Laboratory, ²Shanghai Marine Electronic Equipment Research Institute</p>
5B.3	<p>Assessments of a Quartz Pressure Sensor Characteristics for Accurate Pressure Measurements to Detect Small Seafloor Displacements</p> <hr/> <p>Yuya Machida¹, Shuhei Nishida¹, Eiichiro Araki¹, Hiroyuki Matsumoto¹, Toshinori Kimura¹, Katsuyoshi Kawaguchi¹ Japan Agency for Marine-Earth Science and Technology</p>
5B.4	<p>Deep Seafloor Borehole Observatories for Seismogenic Zone Monitoring</p> <hr/> <p>Eiichiro Araki¹, Toshinori Kimura¹, Yuya Machida¹, Takashi Yokobiki¹, Shuhei Nishida¹, Katsuyoshi Kawaguchi¹, Demian Saffer², Masanori Kyo¹, Tomo Saruhashi¹, Sean Toczko¹, Achim Kopf³ Japan Agency for Marine-Earth Science and Technology, ²The Pennsylvania State University, ³Bremen University</p>

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Offshore Structure and Naval Architecture 2

5D.1	Experimental Study on Flow Around an Array of Four Circular
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	<p>Cylinders</p> <p>Rodolfo Trentin Gonçalves¹, Shinichiro Hirabayashi¹, Hideyuki Suzuki¹ The University of Tokyo</p>
5D.2	<p>Wave Interaction with Submerged Body in Presence of Uneven Bottom</p> <p>Ramnarayan Mondal¹, Ken Takagi¹ The University of Tokyo</p>
5D.3	<p>Experimental Study on Breakwater against Overflow and High Waves</p> <p>Tsukasa Kita¹, Kojiro Suzuki¹, Naoki Tsuruta¹ Port and Airport Research Institute</p>
5D.4	<p>Subsidence Behavior of a Breakwater Subjected to Long Periods of Ground Motions from Huge Subduction Earthquakes</p> <p>Y. Ohya¹, E. Kohama¹, A. Nozu¹ Port and Airport Research Institute</p>

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Numerical Modeling and Simulation 4

5F.1	<p>Management of Empty Container Repositioning Considering Leveling Marine Container Logistics</p> <p>Heng Wang¹, Kenji Tanaka¹ The University of Tokyo</p>
5F.2	<p>Ship Course Keeping Using Eigenvalue Decomposition Adaptive Sliding Mode Control</p> <p>Zhiquan Liu¹, Wei Gu¹, Dijun Gao¹ Shanghai Maritime University</p>
5F.3	<p>Robust Minimum Variance Distortionless Response Beamforming Using Subarray Multistage Processing for Circular Hydrophone Arrays</p> <p>Shaohao Zhu¹, Kunde Yang¹, Yuanliang Ma¹, Qiulong Yang¹, Xiaole Guo¹ Northwestern Polytechnical University</p>