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Local Organizing Committee for OCEANS'12 Conference would like to express our sincerest appreciation to Student Poster Patron:



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Tuesday, May 22

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**Tuesday, 1:30 PM - 3:10 PM**

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<sup>1</sup> TELECOM Bretagne

<sup>2</sup> IFREMER



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<sup>2</sup> Taiwan Ocean Research Institute

<sup>3</sup> Academia Sinica

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<sup>1</sup> Ritsumeikan University

<sup>2</sup> Tokai University

<sup>3</sup> Kinki University

<sup>4</sup> Dainippon Screen Mfg. Co.

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<sup>1</sup> KORDI

<sup>2</sup> Daeyang Electric Co. Ltd.

## TECHNICAL PROGRAM

Tuesday, May 22

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**Tuesday, 3:40 PM - 5:20 PM**

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<sup>1</sup> Hoseo University

<sup>2</sup> KORDI

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**Tuesday, 3:40 PM - 5:20 PM**

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**Kenneth Foote**, Woods Hole Oceanographic Institution

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Co-Chairs:

**Jen-Hwa Guo**, National Taiwan University

**Tae Kyeong Yeu**, KORDI

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Wing Ship Technology Co.

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Tuesday, May 22

### Vehicle design 2

**Odong-do (#101, B2F, Condo)**

**Tuesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Forng-Chen Chiu**, National Taiwan University

**Bong Huan Jun**, KORDI

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<sup>1</sup> Ocean University of China

<sup>2</sup> Qingdao machinery Corp.

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**Bumshick Shin**, Kyuhan Kim

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<sup>2</sup> Pusan National University

<sup>3</sup> University of Tokyo

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<sup>1</sup> Pusan National University

<sup>2</sup> KAIST

<sup>3</sup> University of Tokyo

## TECHNICAL PROGRAM

Wednesday, May 23

### Coastal hazards and Tsunami

**Emerald 2 (#110, 1F, Hotel)**

**Wednesday, 8:30 AM - 10:10 AM**

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**Chad Whelan**, Codar Ocean Sensors, Ltd

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<sup>1</sup> National Electronics and Computer Technology Center

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<sup>1</sup> SAIC

<sup>2</sup> NOAA PMEL

<sup>3</sup> Australian Bureau of Meteorology

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<sup>2</sup> CODAR Ocean Sensors, Ltd.

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<sup>1</sup> Ocean Networks Canada

<sup>2</sup> Institute for Ocean Sciences

<sup>3</sup> Geological Survey of Canada

## TECHNICAL PROGRAM

Wednesday, May 23

### Acoustic telemetry and communication 1

**Geomun-do A (#103, B2F, Condo)**

**Wednesday, 8:30 AM - 10:10 AM**

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#### Design and Application of Dynamic Coding in Shallow Water Acoustic Communications 605

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#### Relay-Aided Cooperative Underwater Acoustic Communications: Selective Relaying 611

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<sup>1</sup> Colorado State University

<sup>2</sup> LSI corporation

<sup>3</sup> Zhejiang University

## TECHNICAL PROGRAM

Wednesday, May 23

### Underwater acoustics and acoustical oceanography 2

**Geomun-do C (#104, B2F, Condo)**

**Wednesday, 8:30 AM - 10:10 AM**

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**Kwang Hwa Lee**, NSWC PCD

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<sup>1</sup> University of Tokyo

<sup>2</sup> KDDI R&D Labs. Inc.

<sup>3</sup> Doshisha University

<sup>4</sup> Indian Institute of Technology

<sup>5</sup> WWF-India

<sup>6</sup> Chilika Development Authority

<sup>7</sup> Mulawarman University

<sup>8</sup> Rare Aquatic Species of Indonesia

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<sup>1</sup> Nippon Marine Enterprises, Ltd.

<sup>2</sup> JAMSTEC

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<sup>1</sup> University of Padova

<sup>2</sup> WHOI

## TECHNICAL PROGRAM

Wednesday, May 23

### Remote sensing and coastal radars 1

**Geumo-do A (#105, B2F, Condo)**

**Wednesday, 8:30 AM - 10:10 AM**

Co-Chairs:

**Tiit Kutser**, University of Tartu

**Jian-Wu Lai**, Taiwan Ocean Research Institute

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<sup>1</sup> Taiwan Ocean Research Institute

<sup>2</sup> National Cheng Kung University



## TECHNICAL PROGRAM

Wednesday, May 23

### Autonomous underwater vehicle 1

**Odong-do (#106, B2F, Condo)**

**Wednesday, 8:30 AM - 10:10 AM**

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**Hiroshi Yoshida**, JAMSTEC

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<sup>1</sup> Seoul National University of Science and Technology

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<sup>1</sup> University of Southampton

<sup>2</sup> National Oceanography Centre

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**Bong Huan Jun**, Hyungwon Shim, Banghyun Kim, Jin-Yeong Park, Hyuk Baek, Pan-Mook Lee, Wu-Joan Kim, Yeon-Seok Park  
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<sup>1</sup> Korea Institute of Machinery & Materials

<sup>2</sup> Korea Advanced Institute of Science and Technology

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**Odong-do (#101, B2F, Condo)**

**Wednesday, 8:30 AM - 10:10 AM**

Co-Chairs:

**Hiroshi Yoshida**, JAMSTEC

**Hyeungsik Choi**, Korea Maritime University

#### Digital Communication Channel Model Analysis for AUV in Maritime Environment 699

**Sun Song**<sup>1</sup>, Sam Lee<sup>1</sup>, Hyun Kim<sup>2</sup>, cheong Kim<sup>2</sup>

<sup>1</sup> LIG Nex1

<sup>2</sup> SOLiD Technologies, Inc.

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<sup>1</sup> The Unniversity of Tokyo

<sup>2</sup> University of Tokyo

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<sup>1</sup> Shanghai Ocean University

<sup>2</sup> Shanghai Jiao Tong University

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Takeshi Kumagai<sup>2</sup>, Susumu Sato<sup>2</sup>, Hiromi Utsugi<sup>1</sup>

<sup>1</sup> JAMSTEC

<sup>2</sup> SAS

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JAMSTEC

## TECHNICAL PROGRAM

Wednesday, May 23

### EAMEN2 - Marine environments 1

**Emerald 1 (#109, 1F, Hotel)**

**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Daisuke Kitazawa**, University of Tokyo

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<sup>2</sup> Fukui Prefectural University

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<sup>1</sup> KORDI  
<sup>2</sup> University of science & technology

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**Jung Young Kwon**<sup>1</sup>, Lee Ho Saeng<sup>1</sup>, Kim Hyeon Ju<sup>1</sup>, Yoon Jung In<sup>2</sup>  
<sup>1</sup> KORDI  
<sup>2</sup> Pukyong National University

## TECHNICAL PROGRAM

Wednesday, May 23

### Oil spill, and marine disasters

**Emerald 2 (#110, 1F, Hotel)**

**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Kyoung-Ho Cho**, KORDI

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Jong-Chun Park<sup>1</sup>, **Se-min Jeong**<sup>1</sup>, Jung-Woo Nam<sup>1</sup>, Sung-Chul Hwang<sup>1</sup>, Moo-Hyun Kim<sup>2</sup>

<sup>1</sup> Pusan National University

<sup>2</sup> Texas A&M University

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**Betsy Seiffert**, R. Cengiz Ertekin

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**Chad Whelan**<sup>1</sup>, Donald Barrick<sup>1</sup>, Anton Kjelaas<sup>2</sup>

<sup>1</sup> Codar Ocean Sensors, Ltd

<sup>2</sup> CODARNor A/S

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**Kyoung-Ho Cho**<sup>1</sup>, Jing-Yong Choi<sup>1</sup>, In-ki Min<sup>1</sup>, Sang-Ik Kim<sup>1</sup>, Kwang-Il Shin<sup>2</sup>, Kwang-Soon Park<sup>1</sup>, Jae-Il Kwon<sup>1</sup>

<sup>1</sup> KORDI

<sup>2</sup> Korea Coast Guard

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**Hidetaka Senga**<sup>1</sup>, Naomi Kato<sup>1</sup>, Lubin Yu<sup>1</sup>, Muneo Yoshie<sup>2</sup>, Toshinari Tanaka<sup>2</sup>

<sup>1</sup> Osaka University

<sup>2</sup> Port and Airport Research Institute

## TECHNICAL PROGRAM

Wednesday, May 23

### Acoustic telemetry and communication 2

**Geomun-do A (#103, B2F, Condo)**

**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Konstantin Kebkal**, EvoLogics GmbH

**Yangze Dong**, Shanghai Marine Electronic Equipment Research Institute

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Federico Favaro<sup>1</sup>, Paolo Casari<sup>1</sup>, Federico Guerra<sup>2</sup>, **Michele Zorzi**<sup>1</sup>

<sup>1</sup> University of Padova

<sup>2</sup> Consorzio Ferrara Ricerche

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The University of New South Wales

## TECHNICAL PROGRAM

Wednesday, May 23

### Oceanographic instrumentation and sensors 1

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**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Pascal Tarits**, UBO/IUEM

**Jung-Yup Kim**, Seoul National University of Science and Technology

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**Gary McMurtry**<sup>1</sup>, Irina Kolotyrkina<sup>1</sup>, Jae Lee<sup>2</sup>, Kee Kim<sup>3</sup>

<sup>1</sup> SOEST, University of Hawaii

<sup>2</sup> National Fisheries Research and Development Institute

<sup>3</sup> Chungnam National University

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**A modular imaging system for collection and analysis of live and preserved zooplankton samples** 823

**Hans Hirche**<sup>1</sup>, Jan Schulz<sup>2</sup>, Thomas Hanken<sup>3</sup>

<sup>1</sup> Alfred Wegener Institute for Polar and Marine research

<sup>2</sup> Institute for Chemistry and Biology of the Marine Environment

<sup>3</sup> Isitec

**Applied At-Depth In-Ocean Differential Electrostatics -- An Experimental Study** N/A

Jonathan Friedman<sup>1</sup>, **Henry Herman**<sup>2</sup>, Newton Truong<sup>2</sup>, Young Cho<sup>1</sup>, Mani Srivastava<sup>2</sup>

<sup>1</sup> USC ISI

<sup>2</sup> UCLA

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<sup>1</sup> POSTECH

<sup>2</sup> Seoultech

## TECHNICAL PROGRAM

Wednesday, May 23

### Remote sensing and coastal radars 2

**Geumo-do A (#105, B2F, Condo)**

**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Hugh Parker**, Fugro LADS Corporation Pty Ltd

**Malcolm Heron**, James Cook University

#### **Environmental Influences on Nearshore X-Band Navigational Radar Images** 829

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<sup>1</sup> National Cheng Kung University

<sup>2</sup> Taiwan Ocean Research Institute

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University of Tokyo

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TELECOM Bretagne

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Wednesday, May 23

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**Geumo-do B (#106, B2F, Condo)**

**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Kenichi Asakawa**, JAMSTEC

**Jaeyoung Lee**, Genesis Oil & Gas

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**Kenichi Asakawa**<sup>1</sup>, Tadahiro Hyakudome<sup>1</sup>, Masao Yoshida<sup>2</sup>,  
Naoyuki Ookubo<sup>2</sup>

<sup>1</sup> JAMSTEC

<sup>2</sup> Kyocera Corp.

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**Jaeyoung Lee**

Genesis Oil & Gas

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**Jiawang Chen**<sup>1</sup>, Jiayin Zhou<sup>1</sup>, Gaosen Li<sup>1</sup>, Meizhen Zhou<sup>2</sup>, Xuanze Ju<sup>2</sup>,  
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<sup>1</sup> Zhejiang University

<sup>2</sup> Department of Underwater Engineering

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Yoshitaka Tachibana<sup>2</sup>

<sup>1</sup> KDDI R&D Laboratories Inc.

<sup>2</sup> SEKI KAIJI Industry CO.LTD.



## TECHNICAL PROGRAM

Wednesday, May 23

### Autonomous underwater vehicle 2

**Odong-do (#101, B2F, Condo)**

**Wednesday, 10:40 AM - 12:20 PM**

Co-Chairs:

**Toshihiro Maki**, University of Tokyo

**Ji-Hong Li**, Pohang Institute of Intelligent Robotics

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**Banghyun Kim**, Bong-Huan Jun, Jin-Yeong Park, Pan-Mook Lee  
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Hyeungsik Choi, Yoon Jongsu, **Mai Ba Loc**, Kim Joonyoung  
Korea Maritime University

**Design and Control of a Convertible ROV** 902

**Hyeungsik Choi**, Park Hanil, Seo Jeongmin, Jeong Sangki  
Korea Maritime University

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**Jeremy Breen**, John McCulloch  
CSIRO

## TECHNICAL PROGRAM

Wednesday, May 23

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### EAMEN2 - Marine environments 2

**Emerald 1 (#109, 1F, Hotel)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Toru Sato**, University of Tokyo

**Jeong-Hwan Oh**, NOWPAP MERRAC - KORDI

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Osaka Prefecture University

**Effectiveness of iron supply in the coastal areas of Tsushima for restoring seaweed beds** 917

**Mitsuo Yamamoto**<sup>1</sup>, Dan Liu<sup>2</sup>

<sup>1</sup> University of Tokyo

<sup>2</sup> Ariake National College of Technology

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## TECHNICAL PROGRAM

Wednesday, May 23

### Pollution monitoring and clean-up

**Emerald 2 (#110, 1F, Hotel)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Noor Azhar Shazili**, Universiti Malaysia Terengganu

---

**Algorithms for Underwater Local heterogeneity Survey Based on AUV Group Usage** 938

**Alexander Scherbatyuk**, Igor Tuphanov

IMTP FEB RAS

**Heavy metal speciation in sediment from the South China Sea off the Pahang coast, Malaysia during the pre- and post- Northeast Monsoon period** 944

**Noor Azhar Shazili**<sup>1</sup>, Kamaruzzaman Yunus<sup>2</sup>, Choo Ming<sup>1</sup>

<sup>1</sup> Universiti Malaysia Terengganu

<sup>2</sup> International Islamic University Malaysia

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**Exhaust Characteristics of Nitrous Oxide from Marine Engine** 952

**Dong-Hoon Yoo**<sup>1</sup>, Yoshifuru Nitta<sup>1</sup>, Masaru Ikame<sup>1</sup>, Mitsuru Hayashi<sup>2</sup>, Hirotsugu Fujita<sup>2</sup>, Jae-Keun LIM<sup>3</sup>

<sup>1</sup> National Maritime Research Institute

<sup>2</sup> Kobe National University

<sup>3</sup> Kunsan National University

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**Clean-up of Submerged Oil in Spilled Shoreline and Sediments of Polluted Lake using Compressed Air** 959

Kyung Hee Kim<sup>1</sup>, Jae-Soo Chang<sup>2</sup>, Jae-Sik Lee<sup>1</sup>, **Sung-Cheol Koh**<sup>2</sup>, Hong Seok Kim<sup>3</sup>

<sup>1</sup> JH Green Co.

<sup>2</sup> Korea Maritime University

<sup>3</sup> Korea Testing & Research Institute

## TECHNICAL PROGRAM

Wednesday, May 23

### Acoustic telemetry and communication 3

**Geomun-do A (#103, B2F, Condo)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Hee-Chun Song**, Scripps Institution of Oceanography

**Mandar Chitre**, National University of Singapore

**Environmental Impact Analysis to design an Adaptive MAC Protocol for Underwater Vehicle Control System based on Underwater Acoustic Channel Estimation** 965

Soo-Hyun Park<sup>1</sup>, **Nam-Yeol Yun**<sup>1</sup>, Seung-Won Shin<sup>1</sup>,  
Sardorbek Muminov<sup>1</sup>, Jin-Young Lee<sup>1</sup>, Chang-Hwa Kim<sup>2</sup>,  
Soo-Young Shin<sup>1</sup>

<sup>1</sup> Kookmin University

<sup>2</sup> Gangneung-Wonju National University

**Accurate Doppler estimation for underwater acoustic communications** 972

**Joël Trubuil**, Thierry Chonavel  
TELECOM Bretagne

**An Improved Demodulation Scheme for FH-MFSK Underwater Acoustic Communications** 977

**Zheguang Zou**, Xiaomei Xu, Xiaomei Xu, Xingbin Tu  
Xiamen University

**Acoustic Underwater Channel and Network Simulator** 981

**Lars Wolff**, Erik Szczepanski, Sabah Badri-Hoeher  
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**High Data Rate Acoustic Link for Micro-ROVs, Employing BICM-ID** 987

**Bayan Sharif**, Jeffrey Neasham, Geraint Goodfellow,  
Charalampos Tsimenidis  
Newcastle University

## TECHNICAL PROGRAM

Wednesday, May 23

### Oceanographic instrumentation and sensors 2

**Geomun-do C (#104, B2F, Condo)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Gary McMurtry**, SOEST, University of Hawaii

**Yoshinori Ikemoto**, National Maritime Research Institute

**Development of a gas-tight serial sampler for seawater and hydrothermal fluids** 993

Shijun Wu<sup>1</sup>, Hui Sun<sup>1</sup>, **Canjun Yang**<sup>1</sup>, Kang Ding<sup>2</sup>

<sup>1</sup> Zhejiang University

<sup>2</sup> University of Minnesota

**Research on Centralized Remote Monitoring System for Offshore Cage Farm** 998

Xiaokang Zhang, Xiaomei Xu, Yangming Peng, **Zheguang Zou**,

Guanlong Su

Xiamen University

**nano-resolution technology demonstrates promise for improved local tsunami warnings on the MARS project** 1002

Paul Migliacio<sup>1</sup>, **Jerome Paros**<sup>1</sup>, Christian Meinig<sup>2</sup>

<sup>1</sup> Paroscientific

<sup>2</sup> NOAA

**High Resolution In-situ Nutrient Analysis: Development of a Nitrate Sensor** 1008

**Jacques Malan**<sup>1</sup>, Andreas Marouchos<sup>1</sup>, Karen Wild-Allen<sup>1</sup>, Mark

Rayner<sup>1</sup>, Peter Ellis<sup>2</sup>

<sup>1</sup> CSIRO

<sup>2</sup> Monash University

## TECHNICAL PROGRAM

Wednesday, May 23

### Oceanography 1

**Geumo-do A (#105, B2F, Condo)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Peter Winsor**, Institute of Marine Science

**Kyeong Park**, University of South Alabama

**Changes in the Kuroshio and its extension under a warming climate in a climate model** 1015

**Woo Geun Cheon**<sup>1</sup>, Young-Gyu Park<sup>2</sup>, Hyoung Rok Kim<sup>1</sup>,  
Young-Nam Na<sup>1</sup>, Young-Gyu Kim<sup>1</sup>

<sup>1</sup> Agency for Defense Development

<sup>2</sup> KORDI

**Effect of Axis Orientation on the Stability of a Coastal Promontory** 1022

**Moon-Jin Park**

Chungnam National University

**Modeling of Electromagnetic Refractive Index in the Persian Gulf** N/A

**Masoud Sadrinasab**, Abolfazl Delbari

Khorramshahr University of Marine Sciences and Technology

**Monitoring Harmful Algal Blooms in Singapore: Developing a HABs observing system** 1026

**Sandric Chee Yew Leong**<sup>1</sup>, Pavel Tkalich<sup>1</sup>, Nicholas Patrikalakis<sup>2</sup>

<sup>1</sup> National University of Singapore

<sup>2</sup> Massachusetts Institute of Technology

**Seasonal and diurnal variation of chlorophyll distribution off the east coast of Korea (East/Japan Sea), 2011** 1031

**Young-Tae Son**<sup>1</sup>, Kyung-Il Chang<sup>1</sup>, Hee-Mang Park<sup>1</sup>, Kyung-Jae Lee<sup>1</sup>,  
Jae-Hyung Park<sup>1</sup>, TaeKeun Rho<sup>2</sup>

<sup>1</sup> Seoul National University

<sup>2</sup> Marine Research Institute

## TECHNICAL PROGRAM

Wednesday, May 23

### Offshore structures, dynamic positioning and mooring

**Geumo-do B (#106, B2F, Condo)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Daehoon Kang**, Daewoo Shipbuilding & Marine Engineering

**Application of Morphing Technique to Airfoil Design** 1035

**Ju Young Kang**<sup>1</sup>, B S Lee<sup>2</sup>

<sup>1</sup> NTNU

<sup>2</sup> Safety at Sea Ltd

**The Preliminary Front-End Engineering Design of Manganese Nodules Mining Vessel** 1043

Hyo-Dong Kang, **Daehoon Kang**, Kwang-Min Lee, Min-Cheol Ryu,  
Sung-Geun Lee, Se-Hun Park  
Daewoo Shipbuilding & Marine Engineering

**The development of mobile dynamic positioning system using the offshore structure wireless network for offshore platform** 1051

Sewon Kim, **Jin Woo Choi**, Geun-Bo Lee, Min-Cheol Ryu,  
Yong-Soo Kim, Jun-Hyung Jung  
Daewoo Shipbuilding & Marine Engineering

**Creep and Stiffness of HMPE Fiber for Permanent Deepwater Offshore Mooring** 1057

**Martin Vlasblom**<sup>1</sup>, Sergio Leite<sup>2</sup>, Peter Davies<sup>3</sup>, Jorn Boesten<sup>1</sup>

<sup>1</sup> DSM Dyneema

<sup>2</sup> LANKHORST EURONETE ROPES, S.A.

<sup>3</sup> IFREMER

**Analysis of a Mooring Line with a Power Cable for a Marine Current Turbine** 1064

**Katsutoshi Takeda**, Ken Takagi, Masayuki Shimizu  
University of Tokyo

## TECHNICAL PROGRAM

Wednesday, May 23

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### Autonomous underwater vehicle 3

**Odong-do (#101, B2F, Condo)**

**Wednesday, 1:30 PM - 3:10 PM**

Co-Chairs:

**Shojiro Ishibashi**, JAMSTEC

**Banghyun Kim**, KORDI

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**Research on Simulation Modeling for Small Autonomous Underwater Vehicle** 1069

**Shuo Pang**, Fei Duan, Hai-feng Jiu, Jin-xin Zhao  
Harbin Engineering University

**Development of a New Underwater Disk Robot** 1077

Hyeungsik Choi, Kim Joonyoung, **Tran Huy**, Woo Myungman  
Korea Maritime University

**Coastal Patrol and Surveillance Networks using AUVs and Delay-Tolerant Networking** 1086

**Saiful Azad**, Paolo Casari, Michele Zorzi  
University of Padova

**Neural Networks Control of Hybrid-Driven Underwater Glider** 1094

Khalid Isa, **Mohd Arshad**  
Universiti Sains Malaysia



## TECHNICAL PROGRAM

Wednesday, May 23

### EAMEN2 - Marine environments 3

**Emerald 1 (#109, 1F, Hotel)**

**Wednesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Mitsuo Yamamoto**, University of Tokyo

**Moon Lee**, Chonnam National University

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**Measurement method for the concentration of hydrogen sulfide  
in pore water using ultraviolet spectrometry 1101**

**Masae Utsumi**, Naoki Nakatani, Natsumi Iwasa, Yohei Tsukahara,  
Koji Otsuka  
Osaka Prefecture University

**Application of reverse simulation to the pollution problem in a  
bay 1106**

Toru Yagi, **Daisuke Kitazawa**  
University of Tokyo

**Developing Advanced Practical Recycling methods of FRP Boats 1112**

**Kooyoung Yoon**, Seung Hee Lee  
Hongik University

**Regional Co-Operative Activities on HNS Preparedness and  
Response in the Northwest Pacific Region 1119**

**Jeong-Hwan Oh**, Seong-Gil Kang, Hye-Mi Lee, Jung-Hyun Lim,  
Sungkook Joh  
NOWPAP MERRAC - KORDI

## TECHNICAL PROGRAM

Wednesday, May 23

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### Ocean energy and marine renewable energy 1

**Emerald 2 (#110, 1F, Hotel)**

**Wednesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Lucy Wyatt**, James Cook University

**Rho-Taek Jung**, University of Ulsan

---

**Tidal Current Energy Potential in Indonesia Waters** N/A

**Krisnaldi Idris**, Ahmad Firdaus

Bandung Institute of Technology

**A Prediction Method and Efficiency of Primary Conversion of OWC Type WEC with Projecting Walls** 1124

**Tomoki Ikoma**<sup>1</sup>, Koichi Masuda<sup>1</sup>, Hikaru Omori<sup>1</sup>, Hisaaki Maeda<sup>1</sup>,  
Hiroyuki Osawa<sup>2</sup>

<sup>1</sup> Nihon University

<sup>2</sup> JAMSTEC

**Use of HF radar for marine renewable applications** 1131

**Lucy Wyatt**

James Cook University

**Hydro-Wind Kinetics Integrated Module for the Renewable Energy Generation** 1136

David Fabuel Ruiz, **Emilio Garcia Moreno**, Francisco Morant Anglada,  
Antonio Correcher Salvador, Eduardo Quiles Cucarella, Ricardo Piza  
Fernandez

Polytechnic University of Valencia

**Model Test of Multi-layer Vertical Axis Tidal Current Turbine** 1142

Kwang-Oh Ko<sup>1</sup>, Chang-Beom Park<sup>1</sup>, **Yonguk Ryu**<sup>1</sup>, Chul Hee Jo<sup>2</sup>

<sup>1</sup> Hyundai Engineering & Construction

<sup>2</sup> Inha University

## TECHNICAL PROGRAM

Wednesday, May 23

### Acoustic telemetry and communication 4

#### Geomun-do A (#103, B2F, Condo)

Wednesday, 3:40 PM - 5:20 PM

Co-Chairs:

**Bayan Sharif**, Newcastle University

**Angelika Kebkal**, EvoLogics GmbH

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#### DARP: A Depth Adaptive Routing Protocol for Large-scale Underwater Acoustic Sensor Networks 1146

Kuei-Ping Shih<sup>1</sup>, Yen-Da Chen<sup>2</sup>, **Chan-Ying Lien<sup>1</sup>**, Ching-Hung Wang<sup>1</sup>

<sup>1</sup> Tamkang University

<sup>2</sup> Lunghwa University of Science and Technology

#### Asynchronous Multiuser Reception for OFDM in Underwater Acoustic Communications 1152

Zhaohui Wang<sup>1</sup>, **Shengli Zhou<sup>1</sup>**, Josko Catipovic<sup>2</sup>, Peter Willett<sup>1</sup>

<sup>1</sup> University of Connecticut

<sup>2</sup> Naval Undersea Warfare Center

#### Broadband Synchronization of Underwater Acoustic Communication Signals using Superimposed Pilots 1159

**Magnus Nordenvaad<sup>1</sup>**, Jaehak Chung<sup>2</sup>, Seongil Kim<sup>3</sup>

<sup>1</sup> Uppsala University

<sup>2</sup> Inha University

<sup>3</sup> Agency for Defence Development

#### DESERT Underwater: an NS-Miracle-based framework to DEsign, Simulate, Emulate and Realize Test-beds for Underwater network protocols 1164

**Riccardo Masiero<sup>1</sup>**, Saiful Azad<sup>1</sup>, Federico Favaro<sup>2</sup>, Matteo Petrani<sup>1</sup>, Giovanni Toso<sup>2</sup>, Federico Guerra<sup>2</sup>, Paolo Casari<sup>1</sup>, Michele Zorzi<sup>1</sup>

<sup>1</sup> University of Padova

<sup>2</sup> Consorzio Ferrara Ricerche

#### Sparse-reconstruction-based High Resolution Beamforming and Its Application to Multi-beam Systems 1174

**Wen Xu**, Huihong Shi, Huiquan Zhang

Zhejiang University

## TECHNICAL PROGRAM

Wednesday, May 23

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### Oceanographic instrumentation and sensors 3

**Geomun-do C (#104, B2F, Condo)**

**Wednesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Canjun Yang**, Zhejiang University

**Hans Hirche**, Alfred Wegener Institute for Polar and Marine research

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**On locating a ship-towed electromagnetic streamer using a seafloor dipole transmitter** 1178

**Andrei Swidinsky**<sup>1</sup>, Sebastian Hölz<sup>1</sup>, Marion Jegen<sup>1</sup>, Nigel Edwards<sup>2</sup>

<sup>1</sup> GEOMAR

<sup>2</sup> University of Toronto

**An electromagnetic-based streamer for near-shore investigations** 1183

**Pascal Tarits**<sup>1</sup>, D'Eu Jean François<sup>1</sup>, Kevin Balem<sup>1</sup>, Fabien Gaspari<sup>1</sup>,  
Sophie Hautot<sup>2</sup>

<sup>1</sup> UBO/IUEM

<sup>2</sup> IMAGIR sarl

**Development and Evaluation of a New Measurement System for Ship Hull-Side Wave Profiles using Electro-Conductive Paint** 1188

**Yoshinori Ikemoto**<sup>1</sup>, Kunihiro Hoshino<sup>1</sup>, Masahiko Makino<sup>1</sup>,  
Ryohei Fukasawa<sup>1</sup>, Hidenobu Goto<sup>2</sup>, Tatsuya Hamada<sup>1</sup>

<sup>1</sup> National Maritime Research Institute

<sup>2</sup> National Maritime Research Institute

**Development of a Camera System for Identifying Tagged Fish Species** 1194

**Andreas Marouchos**, Matthew Sherlock, Dave Kube  
CSIRO

## TECHNICAL PROGRAM

Wednesday, May 23

### Oceanography 2

**Geumo-do A (#105, B2F, Condo)**

**Wednesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Masoud Sadrinasab**, Khorramshahr University of Marine Sciences and Technology  
**Young-Tae Son**, Seoul National University

**Importance of stratification on mixing and transport in a shallow, micro-tidal northern Gulf of Mexico estuary** 1198

**Kyeong Park**

University of South Alabama

**Growth and physiological responses of the Singapore strain of Heterosigma to various nitrogen sources and light conditions** 1205

**Jerome Kok**, Sandric Chee Yew Leong

National University of Singapore

**Detailed circulation and stratification features from an Arctic observing system** 1209

**Peter Winsor**, Thomas Weingartner, Hank Statscewich, Rachel Potter  
Institute of Marine Science

**Acoustic response for the Deep Thermal Front variability off Brazilian southeastern coast: a preliminary study** 1211

Leandro Ponsoni, **Jean-Pierre Hermand**

Université Libre de Bruxelles

**Identifying Prototype States within Hydrodynamic Model Outputs using a Self-Organizing-Map** 1218

Raymond Williams<sup>1</sup>, Paulo de Souza<sup>2</sup>, Emlyn Jones<sup>3</sup>, **Claire D'Este**<sup>3</sup>

<sup>1</sup> Tasmanian ICT Centre, CSIRO

<sup>2</sup> University of Tasmania

<sup>3</sup> CSIRO

## TECHNICAL PROGRAM

Wednesday, May 23

### Automatic control

**Geumo-do B (#106, B2F, Condo)**

**Wednesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Pradya Prempraneerach**, Rajamangala University of Technology Thanyaburi

**Youngbok Kim**, Pukyong National University

#### Autonomous Waypoint Tracking of Kayak Boat using State-Variable Feedback Control 1228

**Pradya Prempraneerach**<sup>1</sup>, Pasan Kulvanit<sup>2</sup>, Kitchalerm Thamchaitas<sup>1</sup>

<sup>1</sup> Rajamangala University of Technology Thanyaburi

<sup>2</sup> Ministry of Science and Technology

#### A new approach for ship motion control based on experiment research 1235

Youngbok Kim, **Van Phuoc Bui**

Pukyong National University

#### A null space control of an underactuated underwater vehicle-manipulator system under ocean currents 1239

Santhakumar Mohan, **Jinwhan Kim**, Yonghyun Kim

KAIST

#### Dynamic Region Boundary-Based Control Scheme for Multiple Autonomous Underwater Vehicles 1244

**Zool Ismail**<sup>1</sup>, Norazwani Sarman<sup>1</sup>, Matthew Dunnigan<sup>2</sup>

<sup>1</sup> Universiti Teknologi Malaysia

<sup>2</sup> Heriot-Watt University

#### Tracking Control for an Autonomous Underwater Vehicle Based on Multiplicative Potential Energy Function 1250

**Zool Ismail**<sup>1</sup>, Bazli Mokhar<sup>1</sup>, Matthew Dunnigan<sup>2</sup>

<sup>1</sup> Universiti Teknologi Malaysia

<sup>2</sup> Heriot-Watt University

## TECHNICAL PROGRAM

Wednesday, May 23

### Vehicle navigation 1

**Odong-do (#101, B2F, Condo)**

**Wednesday, 3:40 PM - 5:20 PM**

Co-Chairs:

**Hayato Kondo**, WHOI

**Nak Yong Ko**, Chosun University

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**A Study of Inverse SSBL acoustic positioning with data transmission for multiple AUV navigation** 1256

**Yoshitaka Watanabe**, Hiroshi Ochi, Takuya Shimura

JAMSTEC

**Parallelization of Path Planning Algorithms for AUVs Concepts, Opportunities, and Program-Technical Implementation** 1262

**Mike Eichhorn**<sup>1</sup>, Ulrich Kremer<sup>2</sup>, Hans Woithe<sup>2</sup>

<sup>1</sup> Ilmenau University of Technology

<sup>2</sup> Rutgers University

**Guidance and control of P-SURO II hybrid AUV** 1270

**Ji-Hong Li**<sup>1</sup>, Mun-Jik Lee<sup>2</sup>, Jong-Geol Kim<sup>2</sup>, Sung-Kook Park<sup>2</sup>,

Sang-Hyun Park<sup>2</sup>, Jin-Ho Suh<sup>2</sup>

<sup>1</sup> Pohang Institute of Intelligent Robotics

<sup>2</sup> KIRO

**Precise Positioning using Stand-alone GPS for Maritime Applications** 1277

**Sulgee Park**, DeukJae Cho, SangHyun Park

KORDI

**Particle Filter Approach for Localization of an Underwater Robot Using Time Difference of Arrival** 1283

**Nak Yong Ko**<sup>1</sup>, Tae Gyun Kim<sup>1</sup>, Yong Seon Moon<sup>2</sup>

<sup>1</sup> Chosun University

<sup>2</sup> Redone Technologies Co. Ltd.

## TECHNICAL PROGRAM

Thursday, May 24

### Marine law, safety, management and education

**Emerald 1 (#109, 1F, Hotel)**

**Thursday, 8:30 AM - 10:10 AM**

Co-Chairs:

**Dr Saharuddin Abdul hamid**, University Malaysia Terengganu

**Jin Hyoung Park**, Wing Ship Technology Co.

#### Study on the safety investigation of the free-fall lifeboat during the skid - launching test 1290

**John Hwang**<sup>1</sup>, Fonseca Francis<sup>2</sup>

<sup>1</sup> Hyundai Samho Heavy Industries Co.

<sup>2</sup> LR

#### A proposal of international regulations for preventing collisions between offshore platforms and ships N/A

**Pengfei Zhang**<sup>1</sup>, Jinsong Zhao<sup>1</sup>, Jinsong Zhao<sup>2</sup>

<sup>1</sup> Shanghai Maritime University

<sup>2</sup> Shanghai Jiao Tong University

#### Safety Requirements for Wing-In-Ground (WIG) Craft 1295

**Jin Hyoung Park**, Deok-Ho Kim, Min-jeong Kang

Wing Ship Technology Co.

#### Recent Development on the Management of Artificial Reefs in Malaysia 1303

**Dr Saharuddin Abdul hamid**<sup>1</sup>, Ahmad Ali<sup>2</sup>, Dr Lokman Husin<sup>3</sup>,

Dr Wan Salihin Wong Abdullah<sup>4</sup>

<sup>1</sup> University Malaysia Terengganu

<sup>2</sup> SEAFDEC

<sup>3</sup> UMT

<sup>4</sup> Universiti Malaysia Terengganu



## TECHNICAL PROGRAM

Thursday, May 24

### Ocean energy and marine renewable energy 2

**Emerald 2 (#110, 1F, Hotel)**

**Thursday, 8:30 AM - 10:10 AM**

Co-Chairs:

**Peter Haugan**, Nansen Environmental and Remote Sensing Center  
**Seungho Shin**, KORDI

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#### **Analysis of Performances of a Shrouded Horizontal Axis Tidal Turbine** 1326

Huihui Sun, **Yusaku Kyojuka**  
Kyushu University

#### **A Novel Ocean Sentinel Instrumentation Buoy for Wave Energy Testing** 1333

Annette von Jouanne<sup>1</sup>, Ted Brekken<sup>1</sup>, Ean Amon<sup>1</sup>, Terry Lettenmaier<sup>1</sup>,  
Reo Phillips<sup>2</sup>, **Chad MacIsaac**<sup>2</sup>  
<sup>1</sup> Oregon State University  
<sup>2</sup> AXYS Technologies Inc.

#### **Simulation of storm surge with wave-current coupled model on unstructured grids system** 1339

**Jong-Joo Yoon**, Ki-Chun Jun, Kwang-Soon Park, Jae-Seol Shim  
KORDI

#### **Norwegian Centre for Offshore Wind Energy** 1343

**Peter Haugan**<sup>1</sup>, Kristin Frøysa<sup>2</sup>, Finn Nielsen<sup>3</sup>  
<sup>1</sup> Geophysical Institute  
<sup>2</sup> Christian Michelsen Research AS  
<sup>3</sup> Statoil ASA

#### **Current Power Generator Using an Oscillating Hydroplane** 1348

**Jong Hun Lee**, Hyun Joe Kim, Se Eun Kim, Jong Soo Seo  
Samsung Heavy Industry

## TECHNICAL PROGRAM

Thursday, May 24

### Acoustic telemetry and communication 5

Geomun-do A (#103, B2F, Condo)

Thursday, 8:30 AM - 10:10 AM

Co-Chairs:

**Chan-Ying Lien**, Tamkang University

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#### Long-Baseline Hydro-Acoustic Positioning Using D-MAC Communication Protocol 1356

**Oleksiy Kebkal**, Konstantin Kebkal, Rudolf Bannasch  
EvoLogics GmbH

#### Random Linear Packet Coding For High Speed Acoustic Communication: An Experimental Analysis. 1363

Rameez Ahmed Rasheed Ahmed, **Milica Stojanovic**  
Northeastern University

#### Channel-aware Routing for Underwater Wireless Networks 1370

**Roberto Petroccia**<sup>1</sup>, Stefano Basagni<sup>2</sup>, Chiara Petrioli<sup>1</sup>,  
Daniele Spaccini<sup>1</sup>

<sup>1</sup> University of Rome

<sup>2</sup> Northeastern University

#### Time Reversal Acoustic Communication with Concatenated Reed-Solomon Code 1379

**Xingyang Nie**<sup>1</sup>, Wen Xu<sup>1</sup>, Jiachun Zheng<sup>2</sup>

<sup>1</sup> Zhejiang University

<sup>2</sup> Jimei University

#### Smart Modems - Underwater Capabilities Beyond Communications 1383

**Dale Green**, Steven McManus  
Teledyne Benthos

## TECHNICAL PROGRAM

Thursday, May 24

### Current measurement technology

Geomun-do C (#104, B2F, Condo)

Thursday, 8:30 AM - 10:10 AM

Co-Chairs:

**Albert Williams**, WHOI

**Sung Yong Kim**, Scripps Institution of Oceanography

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**Sensor Fouling Prevention in an Acoustic Current Meter, MAVS** 1388

**Albert Williams**

WHOI

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**Operational Ocean Monitoring Technologies around Taiwan** 1396

**Li-Chung Wu**<sup>1</sup>, Laurence Zsu-Hsin Chuang<sup>1</sup>, Beng-Chun Lee<sup>2</sup>,

Yen-Bin Lin<sup>1</sup>, Chia Chuen Kao<sup>1</sup>

<sup>1</sup> National Cheng Kung University

<sup>2</sup> Huafan University

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**Sustained observations of mesoscale and submesoscale surface circulation off the U.S. West Coast** 1400

**Sung Yong Kim**<sup>1</sup>, Eric Terrill<sup>1</sup>, Bruce Cornuelle<sup>1</sup>, Burt Jones<sup>2</sup>,  
Libe Washburn<sup>3</sup>, Mark Moline<sup>4</sup>, Jeffrey Paduan<sup>5</sup>, Newell Garfield<sup>6</sup>,  
John Largier<sup>3</sup>, Greg Crawford<sup>7</sup>, P. Michael Kosro<sup>8</sup>

<sup>1</sup> Scripps Institution of Oceanography

<sup>2</sup> University of Southern California

<sup>3</sup> University of California

<sup>4</sup> California Polytechnic State University

<sup>5</sup> Naval Postgraduate School

<sup>6</sup> San Francisco State University

<sup>7</sup> Vancouver Island University

<sup>8</sup> Oregon State University

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**Obtaining Absolute Water Velocity Profiles from Glider-mounted Acoustic Doppler Current Profilers** 1406

**Christopher Ordonez**, R. Shearman, John Barth, Patrick Welch,  
Anatoli Erofeev, Zen Kurokawa

Oregon State University

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**A Low-Cost, Long-Life, Drifting Sensor for Environmental Monitoring of Rivers and Estuaries** 1413

**Claire D'Este**, Michael Barnes, Chris Sharman, John McCulloch  
Tasmanian ICT Centre, CSIRO

## TECHNICAL PROGRAM

Thursday, May 24

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### Marine GIS and information management

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Geumo-do A (#105, B2F, Condo)

Thursday, 8:30 AM - 10:10 AM

Co-Chairs:

**Zdenka Willis**, U.S. IOOS

**Vandecasteele Arnaud**, Mines ParisTech

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**Using Spatial Ontologies for Detecting Abnormal Maritime Behaviour** 1419

**Vandecasteele Arnaud**, Napoli Aldo

Mines ParisTech

**Study on Visualization of FVCOM Model Data Based on the Integration of GIS and FVCOM** 1426

**Bolun Yuan**<sup>1</sup>, Rufu Qin<sup>1</sup>, Zengdi Pan<sup>2</sup>, Liangzhao Lin<sup>1</sup>

<sup>1</sup> Tongji University

<sup>2</sup> East China Sea Branch of State Ocean Administration

**Monitoring of Vessel Traffic Using AIS Data and ALOS Satellite Image** 1431

**Masanori Watagawa**, Eiichi Kobayashi, Nobukazu Wakabayashi

Kobe University

**Developing Business Intelligent Tools for Coral Database System in Thailand** 1435

**Premrudee Noonsang**, Mullica Jaroensutasinee, Uthai Kuhapong,

Sirilak Chumkiew, Krisanadej Jaroensutasinee

Walailak University

**US Integrated Ocean Observing System (IOOS®): Delivering Benefits to Science and Society** 1439

**Zdenka Willis**

U.S. IOOS

## TECHNICAL PROGRAM

Thursday, May 24

### Marine optics, imaging and vision 1

Geumo-do B (#106, B2F, Condo)

Thursday, 8:30 AM - 10:10 AM

Co-Chairs:

**Hong Song**, Zhejiang University

**Hye-On Yoon**, Korea Basic Science Institute

**Image enhancement of underwater target detection by inhomogeneous illumination** 1444

**Haiyong Zheng**<sup>1</sup>, Bing Zheng<sup>1</sup>, Guangrong Ji<sup>1</sup>, Zhongwen Guo<sup>1</sup>, Yuting Sun<sup>2</sup>

<sup>1</sup> Ocean University of China

<sup>2</sup> Shandong Academy of Sciences

**Underwater image quality degradation by scattering** 1448

**Weilin Hou**, Andrey Kanaev, Wesley Goode

U.S. Naval Research Laboratory

**Phenomenological marine snow model for optical underwater image simulation: Applications to color restoration** 1453

**Matthieu Boffety**, Frédéric Galland

Ecole Centrale Marseille

**Application of CLSM and SEM Analyses for Biofouling Study** 1459

Mihye Kong<sup>1</sup>, **Hye-On Yoon**<sup>1</sup>, Joo-Ae Kim<sup>1</sup>, Jo-Ri Bae<sup>1</sup>, Kang-Sup Chung<sup>2</sup>

<sup>1</sup> Korea Basic Science Institute

<sup>2</sup> Korea Institute Geoscience & Mineral Resources

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**Ken Sooknanan**, David Corrigan, Anil Kokaram, Gary Baugh,

Naomi Harte, James Wilson

Trinity College

## TECHNICAL PROGRAM

Thursday, May 24

### Vehicle navigation 2

Odong-do (#101, B2F, Condo)

Thursday, 8:30 AM - 10:10 AM

Co-Chairs:

**Mike Eichhorn**, Ilmenau University of Technology

**Jinwhan Kim**, KAIST

**Alternant Landmark Positioning: Towards Wide Area Observation by Multiple AUVs** 1479

**Takumi Matsuda**, Toshihiro Maki, Takashi Sakamaki, Tamaki Ura  
University of Tokyo

**Survey on suitable 3D features for sonar-based underwater navigation** 1489

**Philipp Woock**

Fraunhofer Institute of Optronics

**Robust and Efficient Singular-Value Decomposition based Algorithm for AUV Localization and Synchronization** 1495

**Saman Abeysekera**

Nanyang Technological University

**Passive Acoustic and Optical Guidance for Underwater Vehicles** 1501

**Hayato Kondo**<sup>1</sup>, Kenji Okayama<sup>2</sup>, Jin-Kyu Choi<sup>3</sup>, Takeo Hotta<sup>4</sup>,  
Masaki Kondo<sup>5</sup>, Tadatsugi Okazaki<sup>5</sup>, Hanumant Singh<sup>1</sup>, Zizhen Zhao<sup>6</sup>,  
Kazuhiko Nitadori<sup>6</sup>, Masao Igarashi<sup>6</sup>, Tetsuo Fukuchi<sup>6</sup>

<sup>1</sup> WHOI

<sup>2</sup> TOA CORPORATION

<sup>3</sup> JAMSTEC

<sup>4</sup> MHI Plant Engineering Co., Ltd

<sup>5</sup> Tokyo University of Marine Science and Technology

<sup>6</sup> SGK System Giken Co., Ltd.

## TECHNICAL PROGRAM

Thursday, May 24

### Acoustic telemetry and communication 6

Geomun-do A (#103, B2F, Condo)

Thursday, 10:40 AM - 12:20 PM

Co-Chairs:

**Dale Green**, Teledyne Benthos

**Wen Xu**, Zhejiang University

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**Concept of a Tsunami Warning Buoy System and an Acoustic Telemetry System for High Current Area** 1507

**Hiroshi Ochi**, Yasuhisa Ishihara, Tomohiko Sugiyama  
JAMSTEC

**Low Power Environmentally Friendly Underwater Acoustic Communication Using Pseudo-noise Spreading Codes** 1510

**Bayan Sharif**, Jeffrey Neasham, Charalampos Tsimenidis, Kalin Dimitrov, Geraint Goodfellow  
Newcastle University

**Short-range Optical OFDM** 1515

**Bayan Sharif**, Charalampos Tsimenidis, Petar Minev  
Newcastle University

**An Improved Direct Adaptive Multichannel Turbo Equalization Scheme for Underwater Communications** 1520

Qingwei Meng<sup>1</sup>, **Jianguo Huang**<sup>1</sup>, Jing Han<sup>1</sup>, Chengbing He<sup>1</sup>,  
Chuang Ma<sup>2</sup>

<sup>1</sup> Northwestern Polytechnical University

<sup>2</sup> Air Force Engineering University

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Lina Pu<sup>1</sup>, Yu Luo<sup>1</sup>, Yibo Zhu<sup>1</sup>, Zheng Peng<sup>1</sup>, Shruti Khare<sup>1</sup>,  
**Jun-Hong Cui**<sup>1</sup>, Benyuan Liu<sup>2</sup>, Lei Wang<sup>1</sup>

<sup>1</sup> University of Connecticut

<sup>2</sup> University of Massachusetts Lowell

## TECHNICAL PROGRAM

Thursday, May 24

### Array and model-based signal processing techniques

Geomun-do C (#104, B2F, Condo)

Thursday, 10:40 AM - 12:20 PM

Co-Chairs:

**James Zhang**, Western Carolina University

**Fengzhong Qu**, Zhejiang University

#### Implementation of a high reliable chirp underwater acoustic modem 1531

Wangwei Lei, **Deqing Wang**, Yongjun Xie, Bingbing Chen, Xiaoyi Hu, Huabin chen  
Xiamen University

#### Pattern Extraction of Sonar Images Using an LPC Edge Detector with Entropy Thresholding 1536

**James Zhang**<sup>1</sup>, Andrew Punch<sup>2</sup>

<sup>1</sup> Western Carolina University

<sup>2</sup> Trident Micro Systems

#### Light-Sync: a Low Overhead Synchronization Algorithm for Underwater Acoustic Networks 1544

Davide Zennaro, Beatrice Tomasi, Lorenzo Vangelista, **Michele Zorzi**  
University of Padova

#### Experimental Results on OFDM-IDMA Communications with Carrier Frequency Offsets 1551

Jian Dang<sup>1</sup>, **Fengzhong Qu**<sup>2</sup>, Zaichen Zhang<sup>1</sup>, Liuqing Yang<sup>3</sup>

<sup>1</sup> Southeast University

<sup>2</sup> Zhejiang University

<sup>3</sup> Colorado State University



## TECHNICAL PROGRAM

Thursday, May 24

### Marine optics, imaging and vision 2

Geumo-do B (#106, B2F, Condo)

Thursday, 10:40 AM - 12:20 PM

Co-Chairs:

**Weilin Hou**, U.S. Naval Research Laboratory

**Francis James Corpuz**, University of the Philippines Diliman

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#### Wavefront Aberration Correction for Laser Propagating Over Water with a Closed-loop Adaptive Optical System 1556

**Hong Song**<sup>1</sup>, Haocai Huang<sup>1</sup>, Ping Yang<sup>2</sup>, Lei Chen<sup>1</sup>, Ruihong Lan<sup>1</sup>, Jiawang Chen<sup>1</sup>, Fengzhong Qu<sup>1</sup>, Yingjun Xie<sup>1</sup>, Jianxing Leng<sup>1</sup>, Ying Chen<sup>1</sup>

<sup>1</sup> Zhejiang University

<sup>2</sup> Hangzhou Dianzi University

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#### Underwater 3D target positioning by inhomogeneous illumination based on binocular stereo vision 1560

Bing Zheng<sup>1</sup>, **Haiyong Zheng**<sup>1</sup>, Lifeng Zhao<sup>1</sup>, Yongjian Gu<sup>1</sup>, Lijun Sun<sup>1</sup>, Yuting Sun<sup>2</sup>

<sup>1</sup> Ocean University of China

<sup>2</sup> Shandong Academy of Sciences

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#### On Detecting and Predicting Harmful Algal Blooms in Coastal Information Systems 1564

Md Shahriar, **Claire D'Este**, Ashfaquur Rahman  
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#### Coral Reef Mosaicking using Teardrop and Fast Image Labeling 1567

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<sup>1</sup> University of the Philippines Diliman

<sup>2</sup> Mapua Institute of Technology

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### Additional Paper

#### A New Generation Power-Data Hybrid Transmission System Based-on G.SHDSL and Power Filter 1573

Chunhu Liu, Bin Fu, Lian Lian