

OCEANS 2009

**Biloxi, Mississippi, USA
26 – 29 October 2009**

Pages 1-951



IEEE Catalog Number: CFP09OCE-PRT
ISBN: 978-1-4244-4960-6

TABLE OF CONTENTS

Review of Ocean-Acoustic Models.....	1
<i>Paul Etter</i>	
Tools Required of Ocean Observing	7
<i>Mario Tamburri</i>	
US IOOS® - Program Update.....	13
<i>Zdenka Willis</i>	
Protecting Electrical and Electronic Systems from Moisture Damage	20
<i>Sidney Martin</i>	
Multipath Cancellation Using a Maximum Likelihood Metric Space.....	23
<i>John Piper</i>	
Wave Energy and Public Opinion in the State of Oregon, U.S.A.	28
<i>Maria Stefanovich</i>	
Design of Marine Broadband Framework for Coastal Fishing and Its Applications.....	38
<i>Masaaki Wada, Katsumori Hatanaka</i>	
BioSonics Underwater Acoustic Sentinel (UWACS) System for Intruder Detection	44
<i>Timothy Acker</i>	
Obstacle Detection, Avoidance and Anti-Collision for MEREDITH AUV.....	48
<i>Ken Teo, Kai Wei Ong, Hoe Chee Lai</i>	
Enhancing the Gulf of Mexico Coastal Ocean Observing System Regional Association: Activities of the GCOOS	58
Education and Outreach Council	58
<i>Christina Simonello, Joe Swaykos, Robert Swett, Jessica Kastler, John O'Connell, Ann Jochens, Michael Spranger, Sharon Walker</i>	
A Case Study of Wind and Sea Surface Properties at 8° N 95° W	63
<i>Dawn Petraitis, Rex Hervey</i>	
The Australian Integrated Marine Observing System (IMOS) - From Initiation to Operation	70
<i>Simon Allen</i>	
Qualification and Reliability in Subsea Electrical Applications	73
<i>Will Mudge, Amar Thiraviam</i>	
The Costalt Project: Towards an Operational Use of Satellite Altimetry in the Coastal Zone	78
<i>Stefano Vignudelli, Paolo Cipollini, Christine Gommenginger, Helen Snaith, Henrique Coehlo, Joana Fernandes, Jesus Gomez-Enri, Cristina Martin-Puig, Philip Woodworth, Salvatore Dinardo, Jérôme Benveniste</i>	
Review of NERRS Station Data during 2008 Gulf of Mexico Hypoxia Event.....	84
<i>Kelly Larue, Danielle Carpenter, Ian Sears</i>	
Wireless, Acoustically Linked, Undersea, Magnetometer Sensor Network.....	93
<i>Mihajlo Tomic, Peter Sullivan, Vincent McDonald</i>	
NWS Tools to Forecast River Stages in the Coastal Zones	97
<i>David Reed, Jeffrey Graschel, David Welch, David Ramirez</i>	
Two-way Atmospheric and Ocean Coupling of the Adriatic Sea Bora	104
<i>Travis Smith, Timothy Campbell, Justin Small, R. Allard</i>	
Geotechnical Investigations of Sandy Seafloors Using Dynamic Penetrometers	114
<i>Nina Stark, Sylvia Stegmann, Hendrik Hanff, Roy Wilkens, Achim Kopf</i>	
A Near Real-Time Scour Monitoring System at Indian River Inlet, Delaware, USA	124
<i>Jack Puleo, Jesse Hayden</i>	
Red ACOMAR: Real-time Networking Activities in the Macaronesian Region As a Contribution to the Coastal Ocean Observations Panel (COOP).....	134
<i>Carlos Barrera, Maria Jose Rueda, Maria Dolores Gelado, Rayco Moran, Octavio Llinas</i>	
A New Reliable Minimal Volume/weight Environmental Friendly Power Unit Design Using Microchannel Vaporizer Fuel Cell Processors and Slice Hulls for Super and Mega Yachts	145
<i>Girges Fath-Allah, Joule Mikhael</i>	
Minimal Fuel Consumption and Highly Maneuverable Marine Vessels Design Based on ASAP Hull Technology and Sontag Non-linear Feedback Stabilization	152
<i>Joule Mikhael, Girges Fath-Allah</i>	
The NWS/NDBC IOOS® Data Assembly Center	159
<i>Bill Burnett, Richard Crout</i>	
The Increasing Importance of HSMDB Metadata	167
<i>Daniel Neumann</i>	
Model-free High Order Sliding Mode Control for ROV: Station-keeping Approach.....	173
<i>Luis Garcia-Valdovinos, Tomas Salgado-Jiménez, Hasan Torres-Rodríguez</i>	
Biophysical Variability in the Kuroshio Extension from Altimeter and SeaWiFS	180
<i>Peter Chu, Yuheng Kuo</i>	
Analysis of Remotely Sensed Ocean Data by the Optimal Spectral Decomposition (OSD) Method	188
<i>Peter Chu</i>	
Current Best Estimates of Performance for NPOESS Environmental Data Records with Oceanographic Applications.....	195
<i>Gary Mineart</i>	

Radioactive Contraband Detection: A Bayesian Approach	204
<i>James Candy, Eric Breitfeller, Brian Guidry, David Chambers, Michael Axelrod, Kenneth Sale, Douglas Manatt</i>	
Promoting Interoperable Ocean Sensors - The Smart Ocean Sensors Consortium	214
<i>Neil Cater, Tom O'Reilly</i>	
Air Cushion Vehicle Response to Waves in the Surf Zone	220
<i>Manhar Dhanak</i>	
UXO Survey Using Vector Magnetic Gradiometer on Autonomous Underwater Vehicle	228
<i>Yuan Hang Pei, Hock Guan Yeo</i>	
Low Load Compliant Mooring - History and Status Update	236
<i>Brett Taft, Chung-Chu Teng, Terry Rutledge</i>	
Development of a NDBC Standard Buoy.....	245
<i>Brett Taft, Mike Burdette, Doug Maxwell, Rodney Riley, Ted Mettlach, Bill Hansen, William Wells</i>	
Measuring Current Profiles on a Moored Buoy through an Acoustic Window.....	255
<i>Brett Taft, Rodney Riley, Ted Mettlach, Richard Crout</i>	
Database Designs and Metadata Management for Climate Observations and Tsunami Sea-Level Monitoring and Quality Control	264
<i>Jing Zhou, Landry Bernard, Richard Bouchard, Kevin Kern, Chung-Chu Teng, Kirk Benson, Jack Higgs</i>	
Diffusion Map Kernel Analysis for Target Classification.....	270
<i>Jason Isaacs</i>	
Generating Acoustic Provinces for the U. S. Navy's Low Frequency Bottom Loss Database Using Geographic Information Systems	277
<i>Timothy Ruppel</i>	
Application of Unstructured-Grid Finite Volume Coastal Ocean Model (FVCOM) to the Gulf of Mexico Hypoxic Zone.....	281
<i>Dubravko Justic, Lixia Wang</i>	
Development of the Geophysical Data Base Variable Resolution (GDBV) Version 2 Using HDF5.....	286
<i>Chad Steed, Chiu-Fu Cheng, David Harvey</i>	
Issues for Metrological and Oceanographic Data Web Services.....	292
<i>Frederick Petry</i>	
An Adaptive Triggering Method for Capturing Peak Samples in a Thin Phytoplankton Layer by an Autonomous Underwater Vehicle.....	300
<i>Yanwu Zhang, Robert McEwen, John Ryan, James Bellingham</i>	
SENSE IT: Student Developed Environmental Sensors Classroom Project	305
<i>Liesl Holaling</i>	
Reproducibility of Single-Beam Acoustic Seabed Classification.....	309
<i>Jon Preston, Art Gleason, Steve Bloomer</i>	
A Predictive Modeling Strategy for GCOOS	314
<i>Christopher Mooers, Cortis Cooper</i>	
Research and Development of AUVs for Deep-Sea Operation	319
<i>Yiping Li, Shuo Li, X. Feng</i>	
Applying the Wavelet Transform to Derive Sea Surface Elevation from Acceleration Signals.....	323
<i>Laurence Zsu-Hsin Chuang, Li-Chung Wu, Chia Chuen Kao, Ching-Ruei Lin</i>	
Advanced Technology in Motion: NIUST's AUV Fleet.....	328
<i>Arne Diercks, Vernon Asper, Jeff Williams, Max Woolsey</i>	
Integral Representation of Linear Free-Surface Potential Flows for Bottom Pressure Calculation	333
<i>Thai Nguyen</i>	
The TAO Shipboard CTD Program under the National Data Buoy Center	343
<i>Janice Boyd, Richard Crout, Lex Leblanc</i>	
Underwater Behavioral Study of the Ganges River Dolphins Based on the First Long-term Real-time Monitoring Using the Integrated Observation System with Multiple Acoustic Arrays.....	351
<i>Harumi Sugimatsu, Tamaki Ura, Junichi Kojima, Rajendar Bahl, Sandeep Behera, Vivek Sheel Sagar, Bushra Khan</i>	
Nonparametric Spatial Analysis for Mine Line Detection	359
<i>John Hyland, Cheryl Smith</i>	
Building Buoys for Observing and STEM Education	369
<i>Lundie Spence, Quint White, Lex Waters, Douglas Levin</i>	
The Ocean Observatories Initiative: Scientific Investigation in a Changing Ocean from Anywhere on Earth	375
<i>Timothy Cowles, Shelby Walker</i>	
Examining SeaWiFS Chlorophyll Variability Along the Louisiana Coast Using Wavelet Analysis	378
<i>Eurico D'Sa, Mitsuko Korobkin</i>	
Shallow Waters SLAM Experiments on Meredith AUV Using Forward Looking Sonar	383
<i>Alvin Koh, Soon Lee Pua, Sardha Wijesoma, Kwang Wee Lee, Bharath Kalyan</i>	
The Design of a Self-propelled Jack-up Drilling Rig for the Chukchi Sea	389
<i>John Bandas, Sarah Schlosser, Sean Finn, Nathan Garza, Jeff Phillips, Andy Lister</i>	
Sustained, Autonomous Coastal Nutrient Observations aboard Moorings and Vertical Profilers	398
<i>Peter Egli, Scott Veitch, Alfred Hanson</i>	
Modeling the Dardanelles Strait Outflow Plume Using a Coupled Model System	407
<i>Cheryl Blain, Mustafa Cambazoglu, Vassiliki Kourafalou</i>	
A Tool for Rapid Configuration of a River Model	415
<i>Robert Linzell, Cheryl Blain, Alan Weidemann, Paul Lyon</i>	

Toward Developing a Hydrodynamic Flow and Inundation Model of the Lower Pearl River	425
<i>Paul McKay, Cheryl Blain</i>	
Drifting Buoy for Autonomous Measurements of River Environment	433
<i>Lisa Emery, Richard Smith, David McNeal, Bill Hughes</i>	
Uncertainty Estimation of Historical Bathymetric Data from Bayesian Networks	441
<i>Paul Elmore, David Fabre, Raymond Sawyer, R. Ladner</i>	
Gatekeeper: An Untethered, Persistent, Station-keeping Gateway Buoy	449
<i>Steven Dasilva, John Cleland, Steven Chappell, Mike Graves</i>	
LED Light Fixtures and Selection Criteria for Underwater Video Inspections	456
<i>Cyril Poissonnet</i>	
National High Frequency Radar Network: Update	463
<i>Jack Harlan, Eric Terrill, Bill Burnett</i>	
Turbulence Measurements from a Glider	470
<i>Fabian Wolk, Rolf Lueck, Louis St. Laurent</i>	
Real-time Data Assimilation of Ice Concentration Into a Coupled Ice/ocean Forecast System	476
<i>Pamela Posey, E. Metzger, Alan Wallcraft, Ole Smedstad, Michael Phelps</i>	
Finite Element Analysis of a Through Hole on a Ceramic Pressure Housing	480
<i>Kenichi Asakawa</i>	
Texas A&M Student Design Project - East Central Gulf of Mexico Truss Spar	483
<i>Clint Dunbar, Jonathan Cotten, R. Hartsfield, D. Garcia, R. Vallejo</i>	
Rapid Inversion in Shallow Water with a Single Receiver Using Modal Time-frequency Pattern Extraction	492
<i>Julien Bonnel, Barbara Nicolas, Jérôme Mars, Dominique Fattaccioli</i>	
Frequency Warping for Waveguide Characterization with a Single Hydrophone	497
<i>Julien Bonnel, Barbara Nicolas, Jérôme Mars, Dominique Fattaccioli</i>	
Passive Acoustic Detection and Classification of Divers in Harbor Environments	502
<i>Ron Lennartsson, Eva Dalberg, Leif Persson, Stefan Petrovic</i>	
Electric Diver Detection in Harbor Environments	509
<i>Ron Lennartsson, Eva Dalberg, Tim Fristedt, Elin Nolander, Leif Persson</i>	
Continuous Nutrient Automated Monitoring on the Mediterranean Sea Using in Situ Flow Analyser	517
<i>Renaud Vuillemin, Luca Sanfilippo, Pompeo Moscetta, Laurent Zudaire, Louise Oriol, Eric Maria, Cyrielle Tricoire, Nadine Le Bris, Stéphane Blain, Philippe Lebaron, Eric Carbonne</i>	
Meeting Stakeholder Ocean Data Needs in the Eastern Caribbean	525
<i>Jorge Capella, Julio Morell, Jorge Corredor</i>	
High Resolution Near-bed Observations in Winter Near Cape Hatteras, North Carolina	530
<i>Brandy Armstrong, Marinna Martini, John Warner</i>	
Illustrative Visualization Techniques for Hurricane Advisory Information	540
<i>Chad Steed, T. J. Jankun-Kelly, J. Swan</i>	
Improved Mooring Line Technology for Tankers and Gas Carriers at Exposed Berths	549
<i>Stephen Banfield, John Flory</i>	
The Numerical Solution of Acoustic Propagation Through Dispersive Moving Media	559
<i>Guy Norton</i>	
Watershed and Hydrodynamic Modeling for Evaluating the Impact of Land Use Change on Submerged Aquatic Vegetation and Seagrasses in Mobile Bay	565
<i>Maurice Estes, Mohammad Al-Hamdan, Ronald Thom, Dale Quattrochi, Dana Woodruff, Chaeli Judd, Jean Ellis, Brian Watson, Hugo Rodriguez, Hoyt Johnson</i>	
A New Tool for Monitoring Ecosystem Dynamics in Coastal Environments: Long-term Use and Servicing Requirements of the Commercial Underwater Bioluminescence Assessment Tool (U-BAT)	572
<i>Cristina Orrico, Mark Moline, Ian Robbins, Brian Zelenke, Andrew Barnard, Wes Strubhar, John Koegler, Casey Moore</i>	
The Use of Position-Tracking Drifters in Riverine Environments	579
<i>William Swick, Jamie Macmahon</i>	
Automation of Ocean Model Performance Metrics	589
<i>James Dykes, Jay Shriver, Sean Ziegeler</i>	
From Paper Notebooks to Laptops: A Technology Advance for the National Ocean Sciences Bowl (NOSB®)	596
<i>Christine Hodgdon, Jordan Lewis</i>	
Real-Time Hydrographic and Meteorological Monitoring in Mobile Bay for Research and Education	599
<i>Michael Dardeau</i>	
Ocean Observing: Linking Observations to the NWS and the Marine Community	603
<i>Jennifer Dorton, Vembu Subramanian, Charlton Galvarino, Dwayne Porter</i>	
Parameter Estimation Errors in Buckingham's Grain Shearing Model	610
<i>William Sanders, Michael Richardson</i>	
Cold Air Outbreak Over the Kuroshio Extension Region	618
<i>Tommy Jensen, Timothy Campbell, Travis Smith, Richard Small, R. Allard</i>	
IOOS Data Management Activities	622
<i>Jeff De La Beaujardière</i>	
Buoy Vandalism Experienced by NOAA National Data Buoy Center	629
<i>Chung-Chu Teng, Stephen Cuculli, Shannon McArthur, Craig Kohler, Bill Burnett, Landry Bernard</i>	
NDBC's Digital Directional Wave Module	637
<i>Rodney Riley, Chung-Chu Teng, Richard Bouchard, Ted Mettlach, Richard Dinoso, Joel Chaffin</i>	
Hyperspectral Remote Sensing of Water Mass Properties in a River-Influenced Coastal Region	645
<i>Steven Lohrenz, Wei-Jun Cai, Xiaogang Chen, Merritt Tuel</i>	

Acoustic Detection of Motor Vessel Signatures in Very Shallow Water	648
<i>Richard Costley, Thomas Muir, Jay Williams</i>	
An Interagency Collaboration Toward the Integrated Ocean Observing System.....	652
<i>John Lever, Charles Alexander, Bruce Gritton</i>	
Undergraduate Marine Science Education: Incorporating Real-World Data	659
<i>James Brey, Ira Geer, Joseph Moran, Robert Weinbeck, Elizabeth Mills, Bernard Blair, Edward Hopkins, Thomas Kiley, Emily Ruwe</i>	
The Role of Web 2.0 in Navy Meteorology and Oceanography (METOC)	663
<i>Paul Williams</i>	
Adaptive Control of Small Outboard-Powered Boats for Survey Applications.....	667
<i>Aaron Fisher, James Vanzwieten, Tannen Vanzwieten</i>	
Air-sea Interaction in the Ligurian Sea: Numerical Simulations and In-situ Data in the Summer of 2007	676
<i>Richard Small, Timothy Campbell, Joao Teixeira, Travis Smith, R. Allard</i>	
Fleet Survey Team: Providing Operational Hydrography to the U.S. Navy	684
<i>Raymond Delgado</i>	
Visual-Based Navigation of an Autonomous Tugboat.....	688
<i>Patrick Rynne, Michael Tall, Justin Lorio, Karl Von Ellenrieder</i>	
Next Generation Use of High Power and Bandwidth in the NE Pacific - A Component of the NSF Ocean Observing Initiative.....	697
<i>Peter Barletto, P. Kosro, Jack Harlan</i>	
The Role of Commercialization in IOOS and the Regional Associations	705
<i>Stephen Woll</i>	
The Coastal and Global Scale Nodes of the Ocean Observatories Initiative	708
<i>Albert Plueddemann, Robert Weller, Jack Barth, Uwe Send</i>	
Experimental Study on the Sailing Performance of a VL莫斯 for Wind Power Plant	715
<i>Ken Takagi, Takuro Hiramatsu, Yuto Korogi, Mamoru Ishiguro</i>	
A Geospatially Enabled, PC-Based, Software to Fuse and Interactively Visualize Large 4D/5D Data Sets.....	721
<i>Jose Andres, McKay Davis, Kayo Fujiwara, John Anderson, Tie Fang, Michael Nedbal</i>	
Operational Challenges of Running a Buoy Network in the Northwest Atlantic.....	730
<i>Eric Davis</i>	
Instrumentation for Continuous Monitoring of Nutrients in Marine Environments.....	737
<i>Pompeo Moscetta, Luca Sanfilippo, Enrico Savino, Pietro Moscetta, Amara Gunatilaka, Roza Allabashi</i>	
Observations on Continuous Nutrient Monitoring in Venice Lagoon.....	747
<i>Luca Sanfilippo, Amara Gunatilaka, Pompeo Moscetta, Enrico Savino, Cristina Dell'Olivo, Francesca Scardia, Alessandro Gurato, Jesus Cisneros-Aguirre</i>	
REMUS Subbottom Image Processing for Integration into ArcGIS.....	754
<i>Dove Green, David Young, Donald Walter</i>	
Numerical Assimilation in Nearshore Spectral Wave Model	763
<i>Yang-Ming Fan, Chia-Chuen Kao, Dong-Jiing Doong, Kuo-Ching Yao, Li-Chung Wu</i>	
ARV Navigation and Control System at Arctic Research	772
<i>Wu Ju, Shuo Li, Xiaohui Wang, Yiping Li, Junbao Zeng</i>	
Effect of Storm Size on Predicted Hurricane Storm Surge in Southeast Louisiana	778
<i>Martin Guillot</i>	
Absorption Properties Along the 70-m Isobath of the Southeastern Bering Sea During July 2008	787
<i>Puneeta Naik, Eurico D'Sa, Joaquim Goes, Helga Gomes</i>	
An Underwater Augmented Reality System for Commercial Diving Operations	794
<i>Rogelio Morales-García, Peter Keitler, Patrick Maier, Gudrun Klinker</i>	
High Reliability Direct-Sequence Spread Spectrum for Underwater Acoustic Communications	802
<i>Fengzhong Qu, Liuqing Yang, T. C. Yang</i>	
An AUV Fuzzy Obstacle Avoidance Method under Event Feedback Supervision	808
<i>Hongli Xu, X. Feng</i>	
Characterization of a Very Shallow Water Acoustic Communication Channel	814
<i>Brian Borowski</i>	
Fuzzy Logic Based Behavior Fusion for Multi-AUV Formation Keeping in Uncertain Ocean Environment	824
<i>Xiaodong Kang, Hongli Xu, X. Feng</i>	
Underwater Transponder Positioning and Navigation of Autonomous Underwater Vehicles.....	831
<i>Oyvind Hegrenæs, Kenneth Gade, Ove Kent Hagen, Per Espen Hagen</i>	
The SEAformatics Project: Empowering the Seafloor.....	838
<i>Andrew Cook, Vlastimil Masek</i>	
Frequency Hopped Frequency Division Multiplexed Signaling for Underwater Acoustic Communications between 60 and 90 kHz in Ports and Very Shallow Waters.....	842
<i>Pierre-Philippe Beaupéan, Milutin Pajovic, Edward Carlson, John Spruance</i>	
Turbo Coded Frequency Hopped Frequency Division Multiplexed Signaling for Underwater Acoustic Communications between 60 and 90 kHz in Ports and Very Shallow Waters	849
<i>Milutin Pajovic, Pierre-Philippe Beaupéan</i>	
Toward a Complete System for Surveillance of the Whole EEZ: ScanMaris and Associated Projects	856
<i>Florent Jangal, Jean-Pierre Georgé, Alain Bonnot, Marie-Annick Giraud, Michel Morel, Aldo Napoli, Anne Littaye</i>	
Bi-static and Multi-frequency Experiments of HFSWR	860
<i>Florent Jangal, Michel Menelle, Valérie Bazin, Gilbert Auffray, Daniel Lecoz</i>	

A Broadband Multi-Channel Source-Receive Array for Ocean Acoustics Research	864
<i>Jeff Skinner, William Hodgkiss</i>	
Simulating Hurricane Gustav and Ike Wave Fields along the Louisiana Innershelf: Implementations of an Unstructured Third-Generation Wave Model, SWAN	873
<i>Seyed Sadiatmousavi, Felix Jose, Gregory Stone</i>	
Towards Interoperability: A Sub-regional Coastal Ocean Observing System Experience	881
<i>Vembu Subramanian, Jeff Donovan, Mark Luther, Robert Weisberg</i>	
Blind DFE Based on NLMS Algorithm with Generalized Normalized Gradient Descent Regularization	886
<i>Abderrazak Abdaoui, Christophe Lao</i>	
Design and Performance of Irregular Sonobuoy Patterns in Complicated Environments	891
<i>Donald Del Balzo, Kevin Stangl</i>	
RBI for Fixed, Mobile, and Floating Offshore Platforms	895
<i>Peter Marshall, Lawrence Goldberg</i>	
New Life for Old Fields: Alternatives to Abandonment	906
<i>Peter Marshall, Yoo Choo</i>	
Inter-Enterprise Integration - Moving Beyond Data Level Integration	915
<i>Bruce Grittin</i>	
ROV in a Bag - An Introduction to Remotely Operated Vehicles for the Classroom.	925
<i>Erica Moulton</i>	
Testing and Evaluation of a Dual-frequency Six-beam Acoustic Doppler Current Profiler	929
<i>Eric Siegel, Rodney Riley</i>	
Legal and Engineering Challenges to Widespread Adoption of Unmanned Maritime Vehicles	932
<i>Stephanie Showalter, Justin Manley</i>	
Surveying Coastal Ship Traffic With LANDSAT	937
<i>Ron Ableah</i>	
Terrain Constrained Stereo Correspondence	943
<i>Gabrielle Inglis, Chris Roman</i>	
Application Scenario of Nautical Ad-hoc Network for Maritime Communications	952
<i>Youngbum Kim, Jonghun Kim, Yupeng Wang, Kyunggi Chang, Jong-Won Park, Yong-Kon Lim</i>	
Narrowband Detection of Acoustic Source in Shallow Ocean Using Vector Sensor Array	956
<i>K. Krishna, G. Anand</i>	
Emergency Management Intelligence Fusion	964
<i>James Haynie, Zachary Rouse, Stephen Mann, Clarence Davis</i>	
Anti-Submarine Visual Analysis Tool; Geospatially Enabling Four Dimensional METOC Data	971
<i>Zachary Rouse, James Haynie, Clarence Davis</i>	
The Performance Analysis of Diversity Technologies for Underwater Channel Environments Using the Experimental Data	976
<i>Hak-Lim Ko, Min-Sang Kim, Seung-Goo Lee, Nam-Chul Lee, Jong-Won Park, Yong-Kon Lim</i>	
Unsupervised Detection of Mine-Like Objects in Seabed Imagery From Autonomous Underwater Vehicles	980
<i>Phil Chapple</i>	
Unified Simulation and Implementation Software Framework for Underwater MAC Protocol Development	986
<i>Shiraz Shahabudeen, Mandar Chitre, Mehal Motani, Alan Yong Siah</i>	
Implications of Simplifying SINR in Underwater Acoustic Networks	995
<i>Craig Benson, Michael Ryan, Michael Frater</i>	
Preprocessor Based on Suprathreshold Stochastic Resonance for Improved Bearing Estimation in Shallow Ocean	1000
<i>V. N. Hari, G. Anand, A. B. Premkumar, A. S. Madhukumar</i>	
Small AUV Docking Algorithms Near Dock Unit Based on Visual Data	1008
<i>Alexander Scherbatyuk, Alexander Vorontsov, Andrey Kushnerik</i>	
The Study About Using Fluid Flow to Generate Electricity	1014
<i>Tadahiro Hyakudome</i>	
Cognitive Intelligence in the Mapping of Underwater Acoustic Communication Environments to Channel Models	1019
<i>Sadia Ahmed, Huseyin Arslan</i>	
Integrating Marine Observatories into a System-of-Systems: Messaging in the US Ocean Observatories Initiative Cyberinfrastructure	1028
<i>Matthew Arrott, Alan Chave, Claudiu Farcas, Emilia Farcas, Jack Kleinert, Ingolf Krueger, Michael Meisinger, John Orcutt, Cheryl Peach, Oscar Schofield, Munindar Singh, Frank Vernon</i>	
Wave Measurements Using GPS	1037
<i>Li-Chung Wu, Dong-Jiing Doong, Beng-Chun Lee, Chia Chuen Kao, Yen-Pin Lin</i>	
An Enhanced Underwater Positioning System to Support Deepwater Installations	1043
<i>Hwee-Pink Tan, Zhi Ang Eu, Winston Seah</i>	
Statistics of Buoy-observed Waves during Typhoons at the Taiwanese Waters from 1997 to 2008	1051
<i>Dong-Jiing Doong, Laurence Zsu-Hsin Chuang, Chia Chuen Kao, Yen-Bin Lin, Kuo-Ching Jao</i>	
Synthetic Aperture Sonar Low Frequency vs. High Frequency Automatic Contact Generation	1058
<i>John Dubberley, Marlin Gendron</i>	
Automated Change Detection Using Synthetic Aperture Sonar Imagery	1062
<i>John Dubberley, Marlin Gendron, Maura Lohrenz</i>	
Wave-Induced Scour Burial Experiments in Carbonate Sediments near Oahu, Hawaii	1066
<i>Michael Richardson, Edward Braithwaite, Paul Elmore, Roy Wilkens, John Bradley</i>	
Hunting Sea Mines with UUV-Based Magnetic and Electro-Optic Sensors	1075
<i>Glenn Sulzberger, John Bono, R. J. Manley, Ted Clem, L. Vaizer, R. Holtzapple</i>	

Effects of Hurricanes on Ambient Noise in the Gulf of Mexico	1080
<i>Mark Snyder</i>	
A Proposed New Storm Surge Scale	1089
<i>Pat Fitzpatrick, Nam Tran, Yee Lau, Yongzuo Li, Chris Hill</i>	
Correlation of the Broadband Spectral Characteristics of Bottlenose Dolphin Signatures with Dolphin Behavior in the Mississippi Sound	1097
<i>Steve Stanic, Bob Brown, Edgar Kennedy, Mobashir Solangi, Delphine Vanderpool, Timothy Hoffland</i>	
An Amphibious Robot for Surf Zone Science and Environmental Monitoring	1107
<i>Thomas Consi, Brian Ardaugh, Trevor Erdmann, Mark Matsen, Matthew Peterson, John Ringstad, Andrew Vechart, Chris Verink</i>	
Gulf of Mexico Master Mapping Plan	1114
<i>Jennifer Wozencraft</i>	
NASA Satellite Monitoring of Water Clarity in Mobile Bay for Nutrient Criteria Development	1117
<i>Slawomir Blonski, Bruce Spiering, Kara Holekamp</i>	
Aqua-Sim: An NS-2 Based Simulator for Underwater Sensor Networks	1124
<i>Peng Xie, Zhong Zhou, Zheng Peng, Hai Yan, Tiansi Hu, Jun-Hong Cui, Zhijie Shi, Yunsi Fei, Shengli Zhou</i>	
Application of an Automatic Event-controlled Sampler for Biological Analysis and Monitoring: Studies on Plume Tracking in Milwaukee Harbor, Wisconsin	1131
<i>Marcia Silva, Francisco Schlenker, Samuel Bingham, Jessica Chepp, David Cox</i>	
Development of an Automated Acoustic Calibration System for Fisheries Acoustic Survey	1141
<i>Stan Tomich, Lawrence Hufnagle, Dezhong Chu</i>	
Monitoring Coastal Marshes for Persistent Saltwater Intrusion	1150
<i>Maria Kalcic, Callie Hall, Jeffrey Russell, Rose Fletcher</i>	
Reinventing Submarine Signature Measurements: Installation of the High Gain Measurement System at SEAFAC	1156
<i>Jennifer Snyder, Richard Chwaszczecki, Michael Slater, E. Tietje, Robert Green</i>	
Uncertainty-based Adaptive AXBT Sampling with SPOTS	1162
<i>Donald Del Balzo, Joseph Klicka</i>	
COSEE: Collaborations to Bring Ocean Science Research to the Public	1166
<i>Liesl Holsting, Gail Scowcroft</i>	
Mapping, Cross-walking, Converting and Exchanging Oceanographic Metadata Information in Video Data Management System	1170
<i>Anna Fiolek, Susan Gottfried, Stacy Ladnier, Sharon Mesick</i>	
A Simple and Effective Noise Whitening Method for Underwater Acoustic OFDM	1177
<i>C. Berger, Shengli Zhou, Weian Chen, Jie Huang</i>	
A Landsat-based Assessment of Mobile Bay Land Use and Land Cover Change from 1974 to 2008	1185
<i>Joseph Spruce, Jean Ellis, James Smoot, Roberta Swann, William Graham</i>	
Robust Data-Centric Storage for Underwater Acoustic Sensor Networks	1191
<i>Rui Cao, Liuqing Yang</i>	
Automatic Workspace Analysis and Vehicle Adaptation for Hydraulic Underwater Manipulators	1198
<i>Jan Albiez, Marc Hildebrandt, Jochen Kerdels, Frank Kirchner</i>	
Developing Best Practices for IOOS Web Portals	1204
<i>David Jones, Janet Olsonbaker</i>	
Performance of the First Year of the Completed NOAA Operational Deep-Sea Tsunameter Network	1210
<i>Richard Bouchard, Craig Kohler, Peter Lessing, Kevin Kern</i>	
An Autonomous Mobile Platform for Underway Surface Carbon Measurements in Open-Ocean and Coastal Waters	1215
<i>Scott Willcox, Christian Meinig, Christopher Sabine, Noah Lawrence-Slavas, Tim Richardson, Roger Hine, Justin Manley</i>	
Automatic Identification of Specular Detections in Multistatic Sonar Systems	1223
<i>Doug Grinnell</i>	
Using Qdot Conjugates to Detect Proteins in Situ in Highly Autofluorescent Cyanobacterial Cells	1233
<i>Shanshan Ren, Karen Orcutt, Kjell Gundersen</i>	
Coastal Online Analysis and Synthesis Tool 2.0 (COAST)	1240
<i>Richard Brown, Andrew Navard, Beth Nguyen</i>	
Modeling the Multidimensional & Fiscal Impacts of Storm Surge & Sea Level Rise: a Compelling View Through a Powerful Interactive 4D Data Integration, Analysis and Visualization Tool	1247
<i>Christopher Malzone, Jon Marcus, Tim Pauyl</i>	
Undersea Communication Network Self-Localization during the Unet'08 Seatrial	1254
<i>Doug Grinnell</i>	
Acoustic Doppler Current Profiler Wave Sentry Buoy	1261
<i>Richard Smith, Berry McCormick, David McNeal, Bill Hughes</i>	
Developing New Coastal Forest Restoration Products Based on Landsat, ASTER, and MODIS Data	1265
<i>Joseph Spruce, William Graham, James Smoot</i>	
Measurement of Spring Thermal Stratification in Lake Michigan with the GLUCOS Observing System	1274
<i>Thomas Consi, Geoff Anderson, Greg Barske, Harvey Bootsma, Thomas Hansen, John Janssen, Val Klump, Robert Paddock, Don Szmania, James Waples</i>	
Development and Test of a Medium Voltage Converter for Ocean Observatories	1279
<i>John Walrod, Joseph Key</i>	
Sensitivity of Delft3D to Input Conditions	1285
<i>Kacey Edwards, Jayaram Veeramony, David Wang, K. Holland, Y. Hsu</i>	
Successive Interference Cancellation for Time-Reversed Underwater Acoustic Channels	1293
<i>Steve Cho, Hee Song, William Hodgkiss</i>	

The Wave Glider: A Wave-Powered Autonomous Marine Vehicle	1300
<i>Roger Hine, Scott Willcox, Graham Hine, Tim Richardson</i>	
Modeling and Motion Analysis of the MARES Autonomous Underwater Vehicle	1306
<i>Bruno Ferreira, Miguel Pinto, Aníbal Matos, Nuno Cruz</i>	
Using Acoustic Tomography to Monitor Deep Ocean Currents in the Eastern Gulf of Mexico	1316
<i>David Rosenfield, Jerald Caruthers, Dmitri Nechaev, Natalia Sidorovskaia, George Ioup, Juliette Ioup, Max Yaremchuk</i>	
A Multi-Layered Controller Approach for High Precision End-Effector Control of Hydraulic Underwater Manipulator Systems	1319
<i>Marc Hildebrandt, Jochen Kerdels, Jan Albiez, Frank Kirchner</i>	
Control of the MARES Autonomous Underwater Vehicle	1324
<i>Bruno Ferreira, Miguel Pinto, Aníbal Matos, Nuno Cruz</i>	
Site Characterization for Tidal Power	1334
<i>Samuel Gooch, Jim Thomson, Brian Polagye, Dallas Meggitt</i>	
Design and Finite Element Analysis of an Ocean Current Turbine Blade	1344
<i>Nicholas Asseff, Hassan Mahfuz</i>	
A Solution to Metadata: Using XML Transformations to Automate Metadata	1350
<i>Jacqueline Mize, Christopher Robertson</i>	
Development of a Relocatable Coastal Forecast System for the US Navy	1357
<i>Philip Chu, Cheryl Blain, Robert Linzell</i>	
GeoCoastPilot: A Better Way of Organizing and Displaying Information in Support of Port Familiarization	1365
<i>Matthew Plumlee, Kurt Schwehr, Lee Alexander, Briana Sullivan, Colin Ware</i>	
Observing the 3-dimensional Distribution of Bio-optical Properties of West Florida Shelf Waters Using Gliders and Autonomous Platforms	1373
<i>David English, Chuannin Hu, Chad Lembke, Robert Weisberg, David Edwards, Laura Lorenzoni, Gino Gonzalez, Frank Muller-Karger</i>	
IOOS - Customer-Focused Activities	1380
<i>Marcia Weeks, Samuel Walker, Mike Koziara</i>	
Side Scan Sonar Image Segmentation and Feature Extraction	1389
<i>Miguel Pinto, Bruno Ferreira, Aníbal Matos, Nuno Cruz</i>	
Quantifying the Seasonal and Interannual Variability of the Formation and Migration Pattern of North Brazil Current Rings	1398
<i>Neha Sharma, Steven Anderson, Peter Brickley, Carolina Nobre, Matthew Cadwallader</i>	
Mixture Theory Model Sensitivity to Effective Viscosity in Simulations of Sandy Bedform Dynamics	1405
<i>Allison Penko, Joseph Calantoni, Donald Slimm</i>	
A Southeast Regional Testbed for Integrating Complex Coastal and Ocean Information Systems	1414
<i>Madilyn Fletcher, Dwayne Porter, Virginia Shervette, Heath Kelsey, Jennifer Pournelle, Dan Ramage</i>	
Potential Impact of Long-Life Environmental Sonobuoys on Littoral ASW	1424
<i>Donald Del Balzo, Joseph Klieka</i>	
Using the Acoustic Doppler Velocimeter (ADV) in the MUDBED Real-Time Observing System	1428
<i>Grace Cartwright, Carl Friedrichs, Patrick Dickhadt, Tim Gass, Frank Farmer</i>	
Polarimetric Remote Sensing of Ocean Waves	1437
<i>Becky Baxter, Brett Hooper, J. Zandy Williams, John Dugan</i>	
Improving the Understanding of Hurricanes: Visualizing Storm Surge	1442
<i>Derek Irby, Mahnasa Mohammadi-Aragh, Robert Moorhead, Phil Amburn</i>	
GCOOS and the Oil and Gas Industry: An Opportunity for an IOOS-Industry Partnership	1446
<i>Jan Van Smirren</i>	
Establishing the GCOOS Regional Association's Data Portal	1452
<i>Matthew Howard, Felimon Gayanilo, Ann Jochens</i>	
Collaborative Search Planning for Multiple Vehicles in Nonhomogeneous Environments	1459
<i>Thomas Wettergren, John Baylog</i>	
An Airborne Imaging MultiSpectral Polarimeter (AROSS-MSP)	1466
<i>Brett Hooper, Becky Baxter, Cindy Piotrowski, J. Zandy Williams, John Dugan</i>	
Underwater Acoustic MIMO OFDM: An Experimental Analysis	1476
<i>Guillem Palou, Milica Stojanovic</i>	
High Frequency Satellite Surveillance of Gulf of Mexico Loop Current Frontal Eddy Cyclones	1484
<i>Nan Walker, Robert Leben, Steven Anderson, Alarie Haag, Chet Pilley</i>	
A New Buoy for Oceanographic and Spill Response Applications	1493
<i>John Walpert, Norman Guinasso, Leslie Bender</i>	
Carolinian Regional Coastal Ocean Observing System (Carolinian RCOOS): A Model for Integration of Sub-Regional Observing Systems	1500
<i>Madilyn Fletcher, Lynn Leonard, Jeffrey Hanson, Jennifer Dorton</i>	
Evaluating the Impact of the Number of Satellite Altimeters Used in an Assimilative Ocean Prediction System	1508
<i>Robert Helber, Jay Shriner, Charlie Barron, Ole Smedstad</i>	
Exploration of Real-time Satellite Measurements to Advance Hurricane Intensity Prediction in the Northern Gulf of Mexico	1512
<i>Nan Walker, Robert Leben, Steven Anderson, Alarie Haag, Chet Pilley, Mitsuko Korobkin</i>	
Evaluation and Compensation of Frequency Dependent Path Loss over OFDM Subcarriers in UAC	1521
<i>Sadia Ahmed, Huseyin Arslan</i>	
Preliminary Results of an S5000 V2 Bathymetric Side Scan Sonar	1526
<i>Kenneth Kiesel</i>	

Numerical Modeling of the Lower Mississippi River - Influence of Forcings on Flow Distribution and Impact of Sea Level Rise on the System	1531
<i>Clinton Willson, Erol Karadogan, C. Berger</i>	
Using Side Scan Sonar to Relative Navigation	1538
<i>Miguel Pinto, Bruno Ferreira, Anibal Matos, Nuno Cruz</i>	
Modeling Rip Currents and Rip-channel Morphodynamics Under Quasi-steady Conditions.....	1547
<i>Julian Simeonov, Todd Holland, Steven Spansel</i>	
Glider Observations of Optical Backscatter in Different Jerlov Water Types: Implications to US Naval Operations.....	1554
<i>Kevin Mahoney, Nathan Allen</i>	
NOAA's Analysis of Observing System Investment Decisions: Approach Used to Assess Alternatives for Satellite-Based Ocean Color Observations	1562
<i>Eric Miller, Neil Wyse, Robert Mairs, Robert Reining</i>	
O₂-MAVS, an Instrument for Measuring Oxygen Flux	1570
<i>Wade McGillis, Chris Langdon, Albert Williams, Brice Loose</i>	
A WAVCIS Based Ocean Observing Station to Provide Hydrodynamic Data Off Eglin Air Force Base, Fort Walton, Florida.....	1579
<i>Gregory Stone, Felix Jose, Yixin Luo, Seyed Siadatmousavi, Todd Holland</i>	
Resilience Tools: Practical Application of Research	1588
<i>Tracie Sempier, Ladon Swann, Rhonda Price, Tina Shumate, Wesley Shaw</i>	
USACE National Coastal Mapping Program and the Next Generation of Data Products	1592
<i>Christopher Macon</i>	
Geospatial Visualization Using Hardware Accelerated Real-Time Volume Rendering	1599
<i>Michael Berberich, Elton Amburn, Robert Moorhead, Jamie Dyer, Manfred Brill</i>	
The Impact of Hypoxia on Bioturbation Rates in the Louisiana Continental Shelf, Northern Gulf of Mexico	1604
<i>Valerie Hartmann, Kevin Briggs, Shivakumar Shivarudrappa, Kevin Yeager, Robert Diaz</i>	
Texas Automated Buoy System.....	1613
<i>Norman Guinasso, Leslie Bender, John Walpert, Linwood Lee, Robert Martin, Robert Hetland, Steven Baum, Matthew Howard</i>	
Satellite Surveillance of the Gulf and Beyond : An Overview of the LSU Earth Scan Laboratory's Ocean Observing Capabilities.....	1620
<i>Alaric Haag, Nan Walker, Chet Pilley, Jessica Comeaux, J. Calvasina, Robert Firth</i>	
Vertical Array Passive Geo-Acoustic Inversion in Range-Dependent Environments	1628
<i>James Leclere, Donald Del Balzo, Lisa Pfug</i>	
Performance Analysis of Filtered Multitone Modulation Systems for Underwater Communication	1635
<i>João Gomes, Milica Stojanovic</i>	
Wave Transformation Over Sabine Bank, Off the Louisiana-texas Coast: Implications for Targeted Sand Mining for Coastal Restoration.....	1644
<i>Felix Jose, Gregory Stone</i>	
Design of a Next Generation Surface Piercing Propeller Test Stand	1653
<i>Justin Lorio, Luis Altamirano, Michael Tall, Karl Von Ellenrieder</i>	
Peak-to-Average Power Ratio (PAR) Reduction for Acoustic OFDM Systems	1661
<i>Guillem Rojo, Milica Stojanovic</i>	
Anisotropy of Bottom Loss in Marine Sediments.....	1668
<i>Dennis Lindwall, Warren Wood</i>	
Proposal for an AUV Refuel Station	1676
<i>Max Blanco</i>	
Assessing the Need for a Certification Program for Oceanographic Professionals	1684
<i>Deidre Sullivan, Leslie Rosenfeld, Tom Murphree</i>	
Multi-Platform Target Detection Using Multi-Channel Coherence Analysis and Robustness to the Effects of Disparity	1689
<i>Nicholas Klausner, James Tucker, Mahmood Azimi-Sadjadi</i>	
Invisible Integration of Science, Technology, Engineering and Math into the Classroom	1696
<i>Douglas Levin, Art Trembanis, Rose Petrecca</i>	
Long-term Real-time Monitoring of Phosphate Using the in Situ CYCLE Sensor	1698
<i>Andrew Barnard, Bruce Rhoades, Cale Wetzel, Alex Derr, J. Ronald Zaneveld, Casey Moore, Corey Koch, Ian Walsh</i>	
International Standard for the Appraisal of Wave Energy Convertors	1704
<i>E. Tietje</i>	
Microwave-Acoustic Water Level Sensor Comparisons: Sensor Response to Change in Oceanographic and Meteorological Parameters.....	1709
<i>John Boon, Robert Heitzenrether, Mark Bushnell</i>	
A MOOS Module for Autonomous Underwater Vehicle Fleet Control	1719
<i>Clayton Tye, Mark Kinney, James Frenzel, Michael O'Rourke, Dean Edwards</i>	
Target Coherence Analysis Using Canonical Correlation Decomposition for SAS Data.....	1725
<i>Yinghui Zhao, Neil Wachowski, Mahmood Azimi-Sadjadi</i>	
Design of an ROV for Precision Sea Floor Vehicle Mobility and Entry in the 2009 MATE International ROV Competition.....	1732
<i>Samuel Bingham, Trevin Erdmann, Mark Matsen, John Ringstad</i>	
EARS Buoy Applications by LADC: I. Marine Animal Acoustics	1736
<i>George Ioup, Juliette Ioup, Lisa Pfug, Arslan Tashmukhametov, Natalia Sidorovskaya, Philip Schexnayder, Christopher Tiemann, Alan Bernstein, Stan Kuczaj, Grayson Rayborn, Joal Newcomb, Rowena Carlson, Alexander Ekimov</i>	

A Preliminary Study of the Influence of Regional Winds on Bering Strait Transport	1745
<i>Chudong Pan, Dmitri Nechaev, Gleb Pantelev</i>	
The Ontological Status of Autonomous Underwater Vehicle Fleets	1748
<i>Patrick Ray, Michael O'Rourke, Dean Edwards</i>	
Map Based Path-planning and Guidance Scheme of an AUV for Inspection of Artificial Structures	1755
<i>Toshihiro Maki, Tamaki Ura, Takashi Sakamaki</i>	
Using Collective Intentionality to Model Fleets of Autonomous Underwater Vehicles	1762
<i>Patrick Ray, Michael O'Rourke, Dean Edwards</i>	
Token Based Medium Access Control Solution for Underwater Acoustic Broadcast Communication	1769
<i>Henry Egbo, Jim Frenzel, Michael O'Rourke, Dean Edwards, Patrick Ray, Nicodemus Hallin</i>	
Enabling Autonomous Underwater Vehicles to Reason Hypothetically	1778
<i>Nicodemus Hallin, Henry Egbo, Patrick Ray, Terry Soule, Michael O'Rourke, Dean Edwards</i>	
Field Measurement of Surface Ship Magnetic Signature Using Multiple AUVs	1785
<i>Benjamin Armstrong, Jesse Pentzer, Douglas Odell, Thomas Bean, John Canning, James Frenzel, Michael Anderson, Dean Edwards, Donald Pugsley</i>	
EARS Buoy Applications by LADC: II. 3-D Seismic Airgun Array Characterization	1794
<i>Joal Newcomb, Arslan Tashmukhametov, George Ioup, Juliette Ioup, Natalia Sidorovskaya, James Stephens, Grayson Rayborn, Philip Summerfield</i>	
Aqua-Net: An Underwater Sensor Network Architecture: Design, Implementation, and Initial Testing	1801
<i>Zheng Peng, Zhong Zhou, Jun-Hong Cui, Zhijie Shi</i>	
AquaOptical: A Lightweight Device for High-rate Long-range Underwater Point-to-Point Communication	1809
<i>Marek Doniec, Iuliu Vasilescu, Carrick Detweiler, Mandar Chitre, Matthias Hoffmann-Kuhnt, Daniela Rus</i>	
Unmanned Marine Vehicle Use at Hurricanes Wilma and Ike	1815
<i>Eric Steinle, Robin Murphy, Michael Hall, Michael Lindemuth</i>	
Toward a Platform-Independent Acoustic Communications and Navigation System for Underwater Vehicles	1821
<i>Sarah Webster, Ryan Eustice, Christopher Murphy, Hanumant Singh, Louis Whitcomb</i>	
Iterative Sparse Channel Estimation and Decoding for Underwater MIMO-OFDM	1828
<i>Jie Huang, Jian-Zhong Huang, C. Berger, Shengli Zhou, Peter Willett</i>	
Numerical Modeling and Hardware-in-the-Loop Simulation of Undersea Networks, Ocean Observatories and Offshore Communications Backbones	1836
<i>Andrew Clark, Donna Kocak, Ken Martindale, Adrian Woodroffe</i>	
Multiplexing Data and Control Channels in Random Access Underwater Networks	1847
<i>Roberto Petrocchia, Stefano Basagni, Chiara Petrioli, Milica Stojanovic</i>	
The MMI Ontology Registry and Repository: A Portal for Marine Metadata Interoperability	1854
<i>Carlos Rueda, Luis Bermudez, Janet Fredericks</i>	
Design, Construction, and Initial Testing of an Autonomous Surface Vehicle for Riverine and Coastal Reconnaissance	1860
<i>Thomas Furfaro, Jeff Dusek, Karl Von Ellenrieder</i>	
Using FlowVis Techniques to Study Ocean Flows	1866
<i>Keqin Wu, Song Zhang, Phil Amburn, Robert Moorhead</i>	
A Tale of Two Observing Systems: Opening Windows to Interoperability	1874
<i>Brenda Babin, Lei Hu</i>	
Nonlinear Ocean Wave Modeling: Beyond Volterra Expansions and Fokker-Planck Equation	1878
<i>Frederick Maltz</i>	
Optimal Power Allocation and Doppler Compensation in Cooperative Underwater Networks Using OFDM	1885
<i>Srinivas Yerramalli, Urbashi Mitra</i>	
The Backseat Control Architecture for Autonomous Robotic Vehicles: A Case Study with the Iver2 AUV	1891
<i>Donald Eickstedt, Scott Sideleau</i>	
Satellite Observations and NCOM Assessment of the Mississippi-Louisiana-Texas Coast following Hurricanes Gustav and Ike	1899
<i>Mitsuko Korobkin, Eurico D'Sa, D. Ko</i>	
Simulated OVW Retrievals in Tropical cyclones for the Next Generation Dual Frequency Scatterometer	1903
<i>Suleiman Alsweiss, W. Linwood Jones, Peth Laupattarakase, Salem El-Nimri, Svetla Veleva, Bryan W. Stiles, Ernesto Rodriguez, Robert W. Gaston</i>	
The Distribution of Gas and Gas Hydrate at Natural Seeps Inferred from Seismic Data	1907
<i>Warren Wood</i>	
Long-Term Deployment of Liquid-Cooled High Frequency (HF) Radar	1911
<i>William Kirkey, Christopher Fuller, Temitope Ojo, James Bonner</i>	
Bio-Physical Ocean Modeling in the Gulf of Mexico	1915
<i>Sergio Derada, Robert Arnone, Stephanie Anderson</i>	
New Solutions for Navigating an Ocean of Data	1922
<i>Sharon Mesick, Susan Gottfried, Scott Hill</i>	
Toward AUV Survey Design for Optimal Coverage and Localization Using the Cramer Rao Lower Bound	1931
<i>Ayoung Kim, Ryan Eustice</i>	
Incorporating Prior Bathymetric Maps with Distributed Particle Bathymetric SLAM for Improved AUV Navigation and Mapping	1938
<i>Stephen Barkby, Stefan Williams, Oscar Pizarro, Michael Jakuba</i>	
An Underwater Target Detection System for Electro-Optical Imagery Data	1945
<i>Michael Kabatek, Mahmood Azimi-Sadjadi, James Tucker</i>	

HabitatSpace: Multi Dimensional Characterization of Pelagic Essential Fish Habitat	1953
<i>Sharon Mesick, Tiffany Vance, C. J. Beegle-Krause, David Stube</i>	
Trends in Oxygen Variability in the Northern Gulf of Mexico Hypoxic Zone	1962
<i>Brenda Babin, Nancy Rabalais</i>	
A Codebook of Feature Vector for Underwater Targets	1966
<i>M. H. Supriya, T. Binesh, P. R. Saseendran Pillai</i>	
Harnessing the SHM of Ocean Waves	1972
<i>Ame (Scott) Arakaki</i>	
Underwater Acoustic Localization by Probabilistic Fingerprinting in Eigenspace	1977
<i>Kun-Chou Lee, Jhih-Sian Ou, Lan-Ting Wang</i>	
Verification of Unmanned Underwater Vehicle with Velocity over 10 knots Guidance Control System Based on Hardware in the Loop Simulation	1981
<i>Arom Hwang, Seonil Yoon, Tae-Yeong Kim, Dae-Yong Kwon, Chulho Choi, Hyeonjin Cho</i>	
On the Characterization of Time-Scale Underwater Acoustic Signals Using Matching Pursuit Decomposition	1986
<i>Nicolas Josso, Jun Zhang, Antonia Papandreou-Suppappola, Cornel Ioana, Cedric Gervaise, Yann Stéphan, Jérôme Mars</i>	
Ontology Driven Approach to Increase METOC Effectiveness	1992
<i>Clarence Davis, Zachary Rouse, Brian Priest</i>	
Hyperspectral Survey Planning for Coastal Surveys	1996
<i>Herbert Ripley</i>	
Mapping Submerged Aquatic Vegetation with Hyperspectral Techniques	1999
<i>Herbert Ripley, Dean Dobberfuhl, Courtney Hart</i>	
Implementations of the Navy Coupled Ocean Data Assimilation System at the Naval Oceanographic Office	2004
<i>Bruce Lunde, Emanuel Coelho</i>	
Benthic Community Response to Hypoxia: Baseline Data	2014
<i>Shivakumar Shivarudrappa, Kevin Briggs, Valerie Hartmann</i>	
Monitoring Phenology as Indicator for Timing of Nutrient Inputs in Northern Gulf Watersheds	2020
<i>Kenton Ross, Bruce Spiering, Maria Kalcic</i>	
The Texas Coastal Ocean Observation Network and Coastal Elevation Datums	2024
<i>Gary Jeffress</i>	
Magnetic Noise Associated with Ocean Internal Waves	2030
<i>Will Avera, Patrick Gallacher, W. Teague, Robert Liang, J. Nelson</i>	
Enhancing AIS to Improve Whale-ship Collision Avoidance and Maritime Security	2034
<i>Philip McGillivray, Kurt Schwehr, Kevin Fall</i>	
Thermal Diffusivity and Strength of Tidal Flat Sediments During a Tidal Simulation	2042
<i>Allen Reed, Jennifer Miselis, K. Holland</i>	
Effects of Hypoxia on Sediment Properties in the Northern Gulf of Mexico	2047
<i>Kevin Briggs, Jan Watkins, Shivakumar Shivarudrappa, Valerie Hartmann</i>	
Building the Ocean STEM Workforce Pipeline: MATE ROV Competitions Expand their Reach to Middle Schools	2055
<i>Jill Zande, Erica Moulton, Deidre Sullivan</i>	
Improvement of Vision Guided Underwater Docking Algorithm of Small AUV ISiMI	2058
<i>Jin-Yeong Park, Bong-Huan Jun, Kihun Kim, Pan-Mook Lee, Jun-Ho Oh, Yong-Kon Lim</i>	
Coincident Observations, with QuikSCAT and ASCAT, of the Effects of Rain-induced Sea Surface Stress During Hurricanes Gustav and Ike	2063
<i>David Weissman, Mark Bourassa</i>	
Experimental Analysis of Statistical Properties of Underwater Acoustic Channel in a Very Shallow Water Using Narrow and Broadband Signals	2073
<i>Sea-Moon Kim, Sung-Hoon Byun, Seung-Geun Kim, Yong-Kon Lim</i>	
Oil Spill Detection Technology for Early Warning Spill Prevention	2077
<i>Ray Mahr, Chris Chase</i>	
Molded Interconnects for High Reliability Undersea Connector Interfaces	2085
<i>Ruth Simpson, Frederick Gehrke, Matthew Holt</i>	
A Multidisciplinary Sea-floor Observatory in the Northern Gulf of Mexico: Results of Preliminary Studies	2092
<i>Thomas McGee, James Woolsey, Carol Lutken, Leonardo Macelloni, Laura Lapham, Brad Battista, Simona Caruso, Vaughn Goebel</i>	
CARIS: Managing Bathymetric MetaData from "Ping" to Chart	2097
<i>Leon Quick, Karen Hart, Burns Foster</i>	
Iterative Block Decision Feedback Equalization for MIMO Underwater Acoustic Communications	2106
<i>Jun Tao, Yahong Zheng, Chengshan Xiao, T. C. Yang</i>	
A performance comparison of MAC protocols for underwater networks using a realistic channel simulator	2112
<i>Federico Guerra, Paolo Casari, Michele Zorzi</i>	
"AGUGLIA". Why Not Going Straight to Density?	2120
<i>Lavinio Gualdesi, Giuseppe Manzella, Federico De Strobel</i>	
ISUS/SUNA Nitrate Measurements in Networked Ocean Observing Systems	2125
<i>Geoff Macintyre, Burkhard Plache, Marlon Lewis, John Andrea, Scott Feener, Scott McLean, Ken Johnson, Luke Coletti, Hans Jannasch</i>	
Understanding Trends in Coastal Ecosystems through Science-Education Partnerships	2132
<i>Laura Murray, Tim Carruthers, Deidre Gibson, Cassie Gurbisz, Joanna Woerner</i>	
Determining Coastal Water Sampling Frequencies Using a Profiling Mooring	2139
<i>Allan Devol, Jan Newton, Wendi Ruef</i>	

HFR Surface Currents Observing System in Lower Chesapeake Bay and Virginia Coast	2143
<i>Larry Atkinson, Teresa Garner, Jose Blanco, Chris Paternostro, Patrick Burke</i>	
Distribution of Wave Crest Maxima in the Vicinity of Offshore Structures	2149
<i>A. H. Izadparast, J. M. Niedzwiecki</i>	
Stability Assessment of Spudcan Foundation	2157
<i>Evan Zimmerman, Charles Aubeny, Chao-Ming Chi</i>	
An Evaluation of Methods for Characterizing the Air / Water Interface for Parabolic Equation Transmission Loss Modeling	2167
<i>Josette Fabre, Guy Norton, Robert Zingarelli, Richard Keiffer</i>	
A Polarization Shift-Keying System for Underwater Optical Communications	2175
<i>William Cox, Brian Hughes, John Muth</i>	
Optimizations for Fourier Synthesized Time Domain Pulse Propagation Calculations	2179
<i>Robert Zingarelli, Stanley Chin-Bing, Michael Collins</i>	
Building the Gulf of Mexico Coastal Ocean Observing System: Maintaining and Enhancing	2184
<i>Ann Jochens, Worth Nowlin</i>	
Experiments in Coherent Change Detection for Synthetic Aperture Sonar	2190
<i>Daniel Sternlicht, J. Harbaugh, Matthew Nelson</i>	
A Spatial Diversity System to Measure Optical Fading in an Underwater Communications Channel	2195
<i>Jim Simpson, Brian Hughes, John Muth</i>	
Endless Winding Technology for Lightweight Synthetic Mooring Lines	2201
<i>Wilco Van Zonneveld, Matthijs Van Leeuwen</i>	
Toward a Marine Ecological Forecasting System	2210
<i>David Green, Louis Uccellini, Marie Colton, Elizabeth Turner, David Scheurer, Nathalie Valette-Silver, Gary Matlock, Doug Wilson, Christopher Brown</i>	
Terrain Aided Navigation for Underwater Vehicles Using Pockmarks	2216
<i>Kjetil Ånonsen, Ove Kent Hagen</i>	
GOMEX08 - High Frequency Acoustic Propagation over the Alabama Alps	2222
<i>Robert Field, Patrick Gallacher, David Hebert, Ewa Jarosz</i>	
Extended Range Underwater Imaging using a Time Varying Intensity (TVI) Approach	2231
<i>Linda Mullen, Alan Laux, B. Cochenour, Walton McBride</i>	
Acoustic Impact of Short-term Ocean Variability in the Okinawa Trough	2239
<i>Charlie Barron, Murat Gunduz, Robert Helber, Gregg Jacobs, Peter Spence</i>	
Extended Range Optical Imaging Using One and Two-dimensional Structured Illumination	2246
<i>Jules Jaffe</i>	
Underwater Optical Ranging: A Hybrid LIDAR-RADAR Approach	2250
<i>Dennis Waldron, Linda Mullen</i>	
Frequency Domain Beamformer for a 3-D Sediment Volume Imaging Synthetic Aperture Sonar	2257
<i>Jonathan Pearson Magooon, Matthew Nelson, Daniel Sternlicht</i>	
Evaluating Connectivity between Marine Protected Areas (MPA) Using CODAR High-Frequency (HF) Radar	2261
<i>Brian Zelenke, Mark Moline, Greg Crawford, Newell Garfield, Burt Jones, John Largier, Jeffrey Paduan, Steven Ramp, Eric Terrill, Libe Washburn</i>	
Cluster of Sound Speed Fields by an Integral Measure	2271
<i>James Fulford</i>	
Flow Interpretation Implications for Poro-elastic Modeling	2275
<i>James Fulford</i>	
Ocean Data Assimilation Guidance Using Uncertainty Forecasts	2279
<i>Emanuel Coelho, Clark Rowley, Gregg Jacobs</i>	
Design and Operational Performance of a Standalone, Passive Heave Compensation System for a Work Class ROV	2287
<i>Andreas Huster, Hans Bergstrom, Jeff Gosior, Derek White</i>	
A Study on the Validity of Buoy Mounted Acoustic Doppler Profilers: A Comparison of Upward and Downward Looking Systems in Onslow Bay, NC	2295
<i>Lea Locke, Richard Crout</i>	
Statistical Space-Time-Frequency Characterization of MIMO Shallow Water Acoustic Channels	2301
<i>Alenka Zajic</i>	
Observations on Dynamic Tensions of Drill String during Drilling Operation of Scientific Drilling Vessel Chikyu	2307
<i>Tomoya Inoue, Masahiko Ozaki, Kazuyasu Wada</i>	
Geolocation Estimation of Marine Species Using a High Resolution Light Tag	2312
<i>Prajas John, Jaison Peter, Adrine Correya, M. H. Supriya, P. R. Saseendran Pillai</i>	
CATCHY: An AUV Ice Dock	2317
<i>Peter King, Ron Lewis, Darrell Mouland, Dan Walker</i>	
Advanced Mid-Water Tools for 4D Marine Data Fusion and Analysis	2323
<i>Maurice Doucet, Colin Ware, Roland Arsenault, Tom Weber, Mashkoor Malik, Larry Mayer, Lindsay Gee</i>	
Research on Simulation of Course Control for Large Ship with Wave Disturbances in Different Sea Conditions	2332
<i>Yuanhui Wang, Xinqian Bian, Xiaoyun Zhang, Guoqing Xia</i>	
SF Bayweb 2009: Planting the Seeds of an Observing System in the San Francisco Bay	2337
<i>Steven Ramp, Joseph Rice, Toby Garfield, John Largier, Mark Stacey</i>	
A Tool Box Dedicated to Sea Airborne SAR Sea Clutter Data	2345
<i>Christophe Sintes, Vincent Gras</i>	

Coherent Microwave Marine Radars for Deterministic Wave Profile Mapping, Coastal Current Mapping, and Ocean Wave Spectra Measurements	2353
<i>Dennis Trizna</i>	
Coherent Microwave Marine Radar Measurements of Directional Ocean Wave Spectra and Mean Current Fields	2358
<i>Dennis Trizna</i>	
Measuring Coastal Sea-surface Salinity of the Louisiana Shelf from Aerially Observed Ocean Color	2366
<i>Virgilio Maisonet, Joel Wesson, Derek Burrage, Stephan Howden</i>	
Simulation of Underwater Acoustic Networks with Field Measurements	2370
<i>Yang Guan, Aijun Song, Justin Yackoski, Chien-Chung Shen, Mohsen Badiey</i>	
Full Year Channel Characterization for Adaptive Underwater Acoustic Communications	2376
<i>Allan Rosenberg, Qinping Zhang, Dmitry Chizhik</i>	
PATT : A Performance Analysis and Training Tool for the Assessment and Adaptive Planning of Mine Counter Measures (MCM) Operations	2385
<i>Pierre-Yves Mignotte, Jose Vazquez, Jon Wood, Scott Reed</i>	
An Automated Event Detection and Classification System for the Abyssal Time-Series Images of Station M, NE Pacific	2395
<i>Danelle Cline, Duane Edgington, Ken Smith, Jacob Ellena, Michael Vardaro, Linda Kuhnz</i>	
Tracking Surface Pollutants in Southern California Coastal Waters	2399
<i>Burt Jones, Amanda Dillon, Lisa Hazard, Eric Terrill, Julie Thomas, Libe Washburn</i>	
A Wind-Propelled Small Waterplane Area Spar	2406
<i>Patrick Ryne, Karl Von Ellenrieder</i>	
Development of a New Unmanned Semi-Submersible (USS) Vehicle	2416
<i>Pete Alleman, Art Kleiner, Chad Steed, Dan Hook</i>	
Interferometric Measurements Using Redundant Phase Centers of Synthetic Aperture Sonars	2422
<i>James Prater, Tesfaye G-Michael</i>	
Operationalizing a Sub-regional Ocean Observing Asset for the U.S. Integrated Ocean Observing System (IOOS)	2428
<i>Krish Narasimhan, Brian Cooper, Vembu Subramanian</i>	
The Integrated Ocean Observing System in Support of Maritime Transportation	2435
<i>Julie Thomas, Lisa Hazard, Heather Kerkering, Steven Ramp, Eric Terrill</i>	
Non-Contact Wet Mateable Connector	2442
<i>Christopher Baer, Georjeanne Purvinis, Mark Alten, Greg Bixler, Lee Fredette, Jason Owens, Jason Schaefer, Gabe Stout</i>	
Distribution of Suspended Particulate Matter in the Surface Waters of the Northern Gulf of Mexico: Interim Report	2448
<i>Sarah Epps, Steven Lohrenz, Kevin Martin, Merritt Tuel</i>	
Ocean Observing Systems Demystified	2451
<i>Luis Bermudez, Eric Delory, Tom O'Reilly, Joaquin Del Rio Fernandez</i>	
NOAA's Physical Oceanographic Real-Time System (PORTS®)	2458
<i>Darren Wright, Robert Bassett</i>	
Applying Open Geospatial Consortium's Sensor Web Enablement to Address Real-Time Oceanographic Data Quality, Secondary Data Use and Long-Term Preservation	2465
<i>Julie Bosch, Janet Fredericks, Tony Cook, Eric Bridger, Sara Haines, Mike Botts, Philip Bogden</i>	
Cyclic Fatigue and Wear in Deepwater Polyester Mooring Systems	2471
<i>Ray Ayers, Saltuk Aksoy</i>	
Real-time Environmental Monitoring from a Wind Farm Platform in the Texas Hypoxia Zone	2477
<i>Ruth Mullins, Steven Dimarco, Norman Guinasso, John Walpert</i>	
The Central Gulf of Mexico Ocean Observing System: Development, Resiliency and Lessons Learned	2487
<i>Stephan Howden, Steven Lohrenz, Vernon Asper</i>	
Proper Care, Maintenance, and Inspection of Climbing Ropes to Reduce Degradation and Help Determine When to Retire Them	2492
<i>Trevor Dimartino, Colin Sandwith</i>	
Waterside Facilities- Enhancing Perimeter Security	2500
<i>Lee Brissey, Steve McLaughlin</i>	
An Ocean Observing System for Harmful Algal Bloom Detection and Tracking	2508
<i>Robert Currier, Cory Boyes, Alan Hails, Kate Nierenberg, Barb Kirkpatrick, Gary Kirkpatrick</i>	
Marine Mammal Habitat in Ecuador: Seasonal Abundance and Environmental Distribution	2512
<i>Julia O'Hern, Keith Mullin, Kevin Barry, Edwin Uskokovich, Douglas C. Biggs</i>	
The Optical Phytoplankton Discriminator	2517
<i>Alan Hails, Cory Boyes, Anamari Boyes, Robert Currier, Karl Henderson, Augie Kotlewski, Gary Kirkpatrick</i>	
The NANOOS Visualization System: Aggregating, Displaying and Serving Data	2521
<i>Craig Risien, Jonathan Allan, Rick Blair, Alex Jaramillo, David Jones, P. Kosro, David Martin, Emilio Mayorga, Jan Newton, Troy Tanner, Stephen Uczekaj</i>	
Life Support Breathing System for: "SubPack" - Rebreather System	2530
<i>Mark Johnson, Gene Melton</i>	
"Ocean Weather" in the Gulf of Mexico: Exploiting Real-Time Satellite Ecological Properties and Circulation Models for Coastal Ocean Monitoring	2540
<i>Sherwin Ladner, Robert Arnone, Juanita Sandidge, D. Ko, Brandon Casey, Callie Hall</i>	
Sampling Synchronization with Gigabit Ethernet	2548
<i>Mark Henderson, Tom Shaver</i>	

Combined GIS and ROV Technologies Improve Characterization of Water Quality in Coastal Rivers of the Gulf of Mexico	2555
<i>Andrew Casper, Eric Steinle, Michael Hall, Barnali Dixon</i>	
Robust Synthetic Aperture Sonar Operation for AUVs	2564
<i>Per Espen Hagen, Roy Hansen</i>	
Use of Synthetic Rope in High-Temperature or Fire Environments	2570
<i>Neil Fontenot, Danielle Stenvors, Justin Gilmore, Amy Solomon, Otto Grabandt, Bertil Van Berkel, Deli Kong</i>	
Development and Characterization of a Novel Direct Drive Rotary Wave Energy Point Absorber	2576
<i>Ken Rhinefrank, Joseph Prudell, Al Schacher</i>	
Measuring Nitrate Fluxes to Assess Estuarine Eutrophication.....	2581
<i>Jan Newton, Allan Devol, Wendi Ruef</i>	
Slocum Glider Observations during the Spring Bloom in the Strait of Georgia.....	2583
<i>Rowan Fox, Jim Gower, Terry Curran</i>	
Using Coupled Models to Study the Effects of River Discharge on Biogeochemical Cycling and Hypoxia in the Northern Gulf Of Mexico	2592
<i>Bradley Penta, D. Ko, R. Gould, Robert Arnone, Richard Greene, John Lehrter, James Hagy, Blake Schaeffer, Michael Murrell, Jan Kurtz, Barry Herchenroder, Rebecca Green, Peter Eldridge</i>	
An Adaptive Logical Link Protocol in for Underwater Acoustic Communication channels.....	2599
<i>Daladier Jabba Molinares, Miguel Labrador</i>	
Strain-rate Dependency of Strength of Soft Marine Deposits of the Gulf of Mexico	2607
<i>Andrei Abelev, Philip Valent</i>	
Numerical Investigation of Dynamic Free-fall Penetrometers in Soft Cohesive Marine Sediments Using a Finite Difference Approach.....	2616
<i>Andrei Abelev, Kevin Tubbs, Philip Valent</i>	
Numerical Investigation of Dynamic Free-fall Penetrometers in Soft Cohesive Marine Sediments Using a Finite Element Approach.....	2626
<i>Andrei Abelev, Julian Simeonov, Philip Valent</i>	
Operational Application of Composited MODIS Chlorophyll-a	2634
<i>Benjamin Jolley, Elizabeth Valenti</i>	
The Chesapeake Bay Interpretive Buoy System: Recent Expansion and Advances	2643
<i>Doug Wilson</i>	
Development of a Global Marine Environmental Library	2648
<i>Margaret Schexnayder, B. Hall, Marc Bourgeois</i>	
Effective Technology for Underwater Hull and Infrastructure Inspection	2652
<i>Sean Newsome, Jesse Rodocker</i>	
Techniques and Tips to Maximize the Usage of a Mini-ROV	2658
<i>Mark Stepanek, Jeff Conger</i>	
Bistatic HF Ocean Radar: Errors and Limitations	2665
<i>Malcolm Heron, Yves Barbin</i>	
Multiple-Access Communications for Underwater Acoustic Sensor Networks Using OFDM-IDMA	2670
<i>Lance Linton, Phillip Conder, Michael Faulkner</i>	
Navigation System Using Seafloor Geodetic Mirror Transponders and Full-swath Mapping System with Synthetic Aperture and Triangle-arrayed Interferometry Techniques for Autonomous Underwater Vehicle	2678
<i>Akira Asada, Tamaki Ura</i>	
Fundamentals of Risk-Based Inspection - A Practical Approach	2684
<i>G. Ghoneim, G. Sigurdsson</i>	
Serving Ocean Model Data on the Cloud	2693
<i>Michael Meisinger, Claudiu Farcas, Emilia Farcas, Charles Alexander, Matthew Arrott, Jeff De La Beaujardière, Paul Hubbard, Rich Signell, Roy Mendelsohn</i>	
Real-Time Measurement of Sea Ice Thickness, Keel Sizes and Distributions and Ice Velocities Using Upward Looking Sonar Instruments.....	2703
<i>David Fissel, Rene Chave, Jan Buermans</i>	
Implementation of the Noblis Sensor Service Oriented Architecture (SOA) and the Noblis Autonomous Marine Sensor System (NAMSS) within an Autonomous Sensor Network (ASN).....	2709
<i>Barry Stamey, Keith Biesecker, Marcus Alzona, Calvin Yeung, Robert McFadyen, Ben Pecheux, Nassissie Fekadu, Brian Cheng, Woody Dorward, Fred Klein</i>	
Coverage Metric for Acoustic Receiver Evaluation and Track Generation.....	2716
<i>Steven Dennis</i>	
Examining Change and Long-term Trends in the Marine Environment Using Satellite-based Time Series	2720
<i>Gary Borstad, Leslie Brown, David Fissel</i>	
The Hyperspectral Imager for the Coastal Ocean (HICO): Sensor and Data Processing Overview	2729
<i>Mark Lewis, R. Gould, Robert Arnone, Paul Lyon, Paul Martinolich, Weilin Hou, Ronnie Vaughan, Adam Lawson, Theresa Scardino, William Snyder, Robert Lucke, Michael Corson, Marcos Montes, Curtiss Davis</i>	
Feature-oriented Coastal Acoustic Tomography: Upwelling at Cabo Frio (Brazil).....	2738
<i>Olivier Carrière, Jean-Pierre Hermand, Leandro Calado, Ana De Paula, Ilson Almeida Da Silveira</i>	
Salt Water Activated Power System (SWAPS) for Ocean Buoys and Related Platforms.....	2746
<i>John Cleland, John Baker, Michael Turner</i>	
AUTOTRACKER: Autonomous Inspection - Capabilities and Lessons Learned in Offshore Operations.....	2754
<i>Jonathan Evans, Pedro Patron, Benjamin Privat, Nicholas Johnson, Chris Capus</i>	

Performance of Micro-modem PSK Signaling Under Variable Conditions During the 2008 RACE and SPACE Experiments	2761
<i>Lee Freitag, Sandipa Singh</i>	
Field Trials of the The Nereus Hybrid Underwater Robotic Vehicle in the Challenger Deep of the Mariana Trench.....	2769
<i>Louis Whitcomb, Andrew Bowen, Dana Yoerger, Chris Taylor, Robert McCabe, Jonathan Howland, Daniel Gomez-Ibanez, James Kinsey, Matthew Heintz, Glenn McDonald, Donald Peters, John Bailey, Eleanor Bors, Tim Shank, Stephen Martin, Sarah Webster, Michael Jakuba, Barbara Fletcher, Chris Young, James Buescher, Patricia Fryer, Samuel Hulme</i>	
A Metric for Comparing Acoustic Transmission Loss Curves.....	2779
<i>Josette Fabre</i>	
Technical Metrics for Acoustic Evaluation	2785
<i>Josette Fabre</i>	
A Tile-Based System for the Rapid Display of Symbolized Digital Nautical Chart Data	2790
<i>Norman Schoenhardt, John Sample, Frank McCready</i>	
The Naval Research Laboratory's Ongoing Implementation of the Open Geospatial Consortium's Catalogue Services Specification	2796
<i>Frank McCready, David Marks</i>	
Acoustic Communication Performance of the WHOI Micro-Modem in Sea Trials of the Nereus Vehicle to 11,000 m Depth	2803
<i>Sandipa Singh, Sarah Webster, Lee Freitag, Louis Whitcomb, Keenan Ball, John Bailey, Chris Taylor</i>	
Oceanographic Data Issues for Support of Navy Fleet Synthetic Training.....	2809
<i>Greg Jimenez</i>	
Weakly Nonlinear Harmonic Acoustic Waves in Classical Thermoviscous Fluids: A Perturbation Analysis	2812
<i>Pedro Jordan</i>	
The Use of Sea Waves for Generation of Electrical Energy and Hydrogen	2816
<i>Marco Trapanese, Vincenzo Franzitta, Francesco Muzio, Gianluca Scaccianoce, Vincenzo Di Dio</i>	
Science to Improve Management of the Gulf of Mexico Hypoxic Zone: A Collaborative Approach.....	2820
<i>Alan Levitus, David Kidwell, Libby Jewett</i>	
Experiments in Bistatic Laser Line Scan (LLS) Underwater Imaging	2824
<i>Fraser Dagleish, Frank Caimi, Anni Vuorenkoski, Walter Britton, Brian Ramos</i>	
AUV Incidents and Outcomes	2833
<i>William Kirkwood</i>	
PG&E's WaveConnect™ Wave Energy Power Pilot Project: Engineering Aspects.....	2838
<i>William Toman, Richard B. Williams, Roger Bedard</i>	
Author Index	