

## **SEATTLE TECHNICAL SESSIONS, SPECIAL TOPICS**

- S1. Coordinated Multi-Vehicle Teams for Marine Applications (Air, Surface, Underwater)
- S2. Polar and Under Ice Stationary and Mobile Observing Systems
- S3. Offshore Earthquakes – Measuring and Mitigating Their Impact
- S4. Wave, Current, Wind, and Gradient Energy Harvesting
- S5. Best Practices in Sensor Design and Use, Systems Operations, and Data Management
- S6. Plastics in the Ocean: Observation and Mitigation Methods
- S7. Aquaculture: Technology for Management, Monitoring, and Mitigation
- S8. Electrification of Marine Propulsion Systems and Digitalization of Marine Handling Systems
- S9. FOR EXHIBITORS ONLY: Commercial Vendor Introduction of New or Improved Products (no paper publication in IEEE Xplore paper)

## **OCEANS TECHNICAL SESSIONS, STANDARD TOPICS**

### 1.0 Underwater Acoustics and Acoustical Oceanography

- 1.1 Sonar and transducers
- 1.2 Calibration of acoustic systems and metrology
- 1.3 Sound propagation and scattering
- 1.4 Acoustical oceanography
- 1.5 Geoacoustic inversion
- 1.6 Bioacoustics
- 1.7 Seismo-acoustics
- 1.8 Ocean noise
- 1.9 Signal coherence and fluctuation

### 2.0 Sonar Signal/Image Processing and Communication

- 2.1 Sonar signal processing
- 2.2 Array signal processing and array design
- 2.3 Model-based signal processing techniques
- 2.4 Vector sensor processing
- 2.5 Synthetic aperture (active and passive)
- 2.6 Classification and pattern recognition (parametric and non-parametric)
- 2.7 Sonar imaging
- 2.8 Acoustic telemetry and communication
- 2.9 Biologically inspired processing

### 3.0 Ocean Observing Platforms, Systems, and Instrumentation

- 3.1 Automatic control
- 3.2 Current measurement technology
- 3.3 Oceanographic instrumentation and sensors
- 3.4 Systems and observatories
- 3.5 Buoy technology

- 3.6 Cables and connectors
- 3.7 Marine geodetic information systems

#### 4.0 Remote Sensing

- 4.1 Air / sea interaction
- 4.2 Lidar
- 4.3 Passive observing sensors
- 4.4 Coastal radars
- 4.5 Ocean color and hyperspectral measurements
- 4.6 Airborne and satellite radar and SAR
- 4.7 Operational observation
- 4.8 Sensor synergy
- 4.9 Space systems

#### 5.0 Ocean data Visualization, Modeling, and Information Management

- 5.1 Access, custody, and retrieval of data
- 5.2 Data visualization
- 5.3 Numerical modeling and simulation
- 5.4 Marine GIS and data fusion
- 5.5 Information management
- 5.6 Data assimilation
- 5.7 Real-Time Data Quality Control

#### 6.0 Marine Environment, Oceanography, and Meteorology

- 6.1 Oceanography: physical, geological, chemical, biological
- 6.2 Marine geology and geophysics
- 6.3 Hydrography / seafloor mapping / geodesy
- 6.4 Hydrodynamics
- 6.5 Marine life and ecosystems
- 6.6 Meteorology
- 6.7 Pollution monitoring
- 6.8 Mineral resources

#### 7.0 Optics, Imaging, Vision, and E-M Systems

- 7.1 Imaging and vision
- 7.2 Beam propagation
- 7.3 Optical sensors and adaptive optics
- 7.4 Marine optics technology and instrumentation
- 7.5 Holography and 3D imaging
- 7.6 Optical communication
- 7.7 E-M sensing

## 8.0 Marine Law, Policy, Management, and Education

- 8.1 Coastal zone management
- 8.2 Ocean economic potential
- 8.3 Marine law and policy
- 8.4 International issues
- 8.5 Marine safety and security
- 8.6 Law of the Sea and UNCLOS
- 8.7 Ocean resources
- 8.8 Marine education and outreach
- 8.9 Marine archaeology

## 9.0 Offshore, Structure and Technology

- 9.1 Ocean energy
- 9.2 Ropes and tension members
- 9.3 Offshore structures
- 9.4 Marine materials science
- 9.5 Marine salvage
- 9.6 Diving
- 9.7 Pollution clean-up and pollution remediation
- 9.8 Deepwater development technology
- 9.9 Seafloor engineering
- 9.10 Ocean exploration

## 10.0 Ocean Vehicles and Floating Structures

- 10.1 Vehicle design
- 10.2 Vehicle navigation
- 10.3 Vehicle performance
- 10.4 Autonomous underwater vehicles
- 10.5 Manned underwater vehicles
- 10.6 Remotely operated vehicles
- 10.7 Dynamic positioning
- 10.8 Moorings, rigging, and anchors
- 10.9 Naval architecture