

# **2021 International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea 2021)**

**Reggio Calabria, Italy  
4-6 October 2021**



**IEEE Catalog Number: CFP21P82-POD  
ISBN: 978-1-6654-4758-4**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21P82-POD
ISBN (Print-On-Demand):	978-1-6654-4758-4
ISBN (Online):	978-1-6654-1458-6

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# WORKSHOP PROGRAM

---

Tuesday, October 5

---

## ***SESSION 1.1 - Measurement and Evaluation Metodologies for Environment - PART 1***

**Room: Virtual Room #1**

**Chairs:** Massimo Squillante, *University of Sannio, Italy*  
Roberto Jannelli, *University of Sannio, Italy*  
David Carfì, *University of Messina, Italy*

**1 Parsimonious AHP applied to the conservation of cetaceans: a case study in the Gulf of Taranto**

*Roberto Carlucci, University of Bari, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Gerarda Fattoruso, University of Sannio, Italy*  
*Maria Grazia Oliveri, University of Sannio, Italy*  
*Pasquale Ricci, University of Bari, Italy*  
*Massimo Squillante, University of Sannio, Italy*

**6 Uncertainty and Factor Indeterminacy: Quality Perception of Bluefish Products**

*Enrico Ciavolino, University of Salento, Italy*  
*Mario Angelelli, University of Salento, Italy*  
*Federica Stella Blasi, University of Salento, Italy*

**11 Unified pH applied to standard seawater and NaCl solutions: preliminary studies**

*Raquel Quendera, Instituto Português da Qualidade, I.P., Portugal*  
*Olivier Pellegrino, Instituto Português da Qualidade, I.P., Portugal*  
*Sara Moura, Instituto Português da Qualidade, I.P., Portugal*  
*João Abrantes, Instituto Português da Qualidade, I.P., Portugal*  
*Vítor Cabral, Instituto Português da Qualidade, I.P., Portugal*  
*Andreia Furtado, Instituto Português da Qualidade, I.P., Portugal*  
*João Alves e Sousa, Instituto Português da Qualidade, I.P., Portugal*

---

## ***SESSION 1.2 - Organic Chemistry and Marine Ecosystems: from Pollution to Nanotechnology***

**Room: Virtual Room #2**

**Chairs:** Roberta Ragni, *University of Bari "Aldo Moro", Italy*  
Pietro Cotugno, *University of Bari "Aldo Moro", Italy*  
Danilo Vona, *University of Bari "Aldo Moro", Italy*

**16 Ecosafe Nano-based solutions for Pollution Monitoring and Control in the Marine Environment**

*Ilaria Corsi, University of Siena, Italy*  
*Arianna Bellingeri, University of Siena, Italy*  
*Chiara Battocchio, University of Roma Tre, Italy*  
*Andrea Fiorati, Politecnico di Milano, Italy*  
*Iole Venditti, University of Roma Tre, Italy*  
*Carlo Punta, Politecnico di Milano, Italy*

- 21 **Mapping of Organotin compounds in sediments of Mar Piccolo (Taranto, Italy) using Gas Chromatography-Mass Spectrometry analysis and geochemical data**  
*Federica Massari, University of Bari, Italy*  
*Pietro Cotugno, University of Bari, Italy*  
*Angelo Tursi, University of Bari, Italy*  
*Paola Milella, University of Bari, Italy*  
*Stefania Lisco, University of Bari, Italy*  
*Giovanni Scardino, University of Bari, Italy*  
*Giovanni Scicchitano, University of Bari, Italy*  
*Angela Rizzo, University of Bari, Italy*  
*Eliana Valenzano, University of Bari, Italy*  
*Massimo Moretti, University of Bari, Italy*  
*Giuseppe Mastronuzzi, University of Bari, Italy*  
*Giovanni Galietta, Autorità di Bacino Distrettuale dell'Appennino Meridionale, Italy*  
*Gennaro Capasso, Autorità di Bacino Distrettuale dell'Appennino Meridionale, Italy*  
*Vera Corbelli, Autorità di Bacino Distrettuale dell'Appennino Meridionale, Italy*
- 27 **Straightforward and effective removal of phenolic compounds from water by Polydopamine coated Diatomaceous Earth**  
*Cesar Vicente-Garcia, University of Bari, Italy*  
*Valentina Losacco, University of Bari, Italy*  
*Danilo Vona, University of Bari, Italy*  
*Stefania R. Cicco, ICCOM, CNR, Italy*  
*Emiliano Altamura, University of Bari, Italy*  
*Gianluca Maria Farinola, University of Bari, Italy*  
*Roberta Ragni, University of Bari, Italy*
- 32 **PFAS Proficiency test based on real environmental matrix**  
*Claudio Carrer, Provveditorato Interregionale per le Opere Pubbliche Veneto-Trentino Alto Adige-Friuli Venezia Giulia*  
*Claudio Carbone, Responsabile Elaborazione Dati (RED) per InterCinD, Italy*  
*Simona Manganelli, Labservice Analytica srl BU InterCinD, Italy*  
*Ivano Battaglia, Labservice Analytica srl, Italy*  
*Antonio Fornaro, Labservice Analytica srl, Italy*
- 37 **Halotolerance of Rhodobacter sphaeroides for saline and hypersaline wastewater bioremediation**  
*Rossella Labarile, Università degli Studi di Bari, CNR, Italy*  
*Gianluca Maria Farinola, Università degli Studi di Bari, Italy*  
*Maria Varsalona, Università degli Studi di Bari, CNR, Italy*  
*Francesca Italiano, Università degli Studi di Bari, CNR, Italy*  
*Gabriella Buscemi, Università degli Studi di Bari, CNR, Italy*  
*Massimo Trotta, CNR - Institute for Physical-Chemical Processes, Italy*  
*Matteo Grattieri, Università degli Studi di Bari, CNR, Italy*

---

### **SESSION 1.3 - Current Challenges and new Technological Approaches Applied to Marine Mammals and Sea Turtles Conservation - PART 1**

#### **Room: Virtual Room #3**

**Chairs:** *Giulia Cipriano, University of Bari Aldo Moro, Italy*  
*Rosalia Maglietta, CNR-STIIMA, Italy*  
*Aylin Akkaya, DMAD-Marine Mammals Research Association*  
*Marta Azzolin, Gaia Research Institute Onlus*

- 43 **Multimodal data fusion and analysis for cetaceans' presence and abundance estimation in the Gulf of Taranto**  
*Vito Renò, CNR-STIIMA, Bari, Italy*  
*Pierluigi Dibari, CNR-STIIMA, Bari, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Giovanni Dimauro, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Giovanni Coppini, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Rita Lecci, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Rosalia Maglietta, CNR-STIIMA, Bari, Italy*  
*Salvatore Causio, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*
- 47 **Contour extraction algorithm for the automated photo-identification of dolphins**  
*Rosalia Maglietta, CNR-STIIMA, Bari, Italy*  
*Emanuele Seller, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Vito Renò, CNR-STIIMA, Bari, Italy*  
*Giovanni Dimauro, University of Bari, Italy*  
*Ettore Stella, CNR-STIIMA, Bari, Italy*
- 52 **Developing a protocol for the photo-identification of striped dolphin in the Gulf of Taranto (Northern Ionian Sea, Central Mediterranean Sea)**  
*Francesca Cornelia Santacesaria, Jonian Dolphin Conservation, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Stefano Bellomo, Jonian Dolphin Conservation, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Rosalia Maglietta, CNR-STIIMA, Bari, Italy*  
*Vittorio Pollazzon, Jonian Dolphin Conservation, Italy*  
*Pasquale Ricci, University of Bari, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*
- 58 **Reliability of Unmanned Aerial Vehicles for the groups size estimation of Grampus griseus (Cuvier, 1812) in the Gulf of Taranto (Northern Ionian Sea, Central-eastern Mediterranean Sea)**  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Rosalia Maglietta, CNR-STIIMA, Bari, Italy*  
*Stefano Bellomo, Jonian Dolphin Conservation, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Vittorio Pollazzon, Jonian Dolphin Conservation, Italy*  
*Francesca Cornelia Santacesaria, Jonian Dolphin Conservation, Italy*  
*Pasquale Ricci, University of Bari, Italy*
- 63 **Photogrammetry applications on stranded cetaceans: fin whale case study and preliminary results**  
*Silvio Del Pizzo, University of Naples "Parthenope", Italy*  
*Salvatore Troisi, University of Naples "Parthenope", Italy*  
*Rosa Linda Testa, Marine Protected Area "Punta Campanella", Italy*  
*Giuseppe Sciancalepore, University of Padua, Italy*  
*Davide Pedrotti, University of Padua, Italy*  
*Guido Pietroluongo, University of Padua, Italy*

---

**SESSION 2.1 - Measurement and Evaluation Methodologies for Environment - PART 2**

**Room: Virtual Room #1**

**Chairs:** Massimo Squillante, *University of Sannio, Italy*  
 Roberto Jannelli, *University of Sannio, Italy*  
 David Carfi, *University of Messina, Italy*

- 68 **Plastic ocean reduction via green packaging cooperative agreements**  
*David Carfi, University of Messina, Italy*  
*Alessia Donato, University of Messina, Italy*  
*Massimo Squillante, University of Sannio, Italy*  
*Maria Incoronata Fredella, EMSO Eric, Italy*
- 74 **Exploring long-term trends in marine ecosystems: machine-learning approaches to global change biology**  
*Domenico D'Alelio, Stazione Zoologica Anton Dohrn, Italy*  
*Salvatore Rampone, University of Sannio, Italy*  
*Luigi Maria Cusano, University of Sannio, Italy*  
*Nadia Sanseverino, University of Sannio, Italy*  
*Luca Russo, University of Rome 'Tor Vergata', Italy*  
*Michael W. Lomas, Bigelow Laboratory for Ocean Sciences, USA*
- 80 **Industrial meat production and ocean degradation: cooperative paradigms towards economic structural solutions and healthy diet changes**  
*David Carfi, University of Messina, Italy*  
*Alessia Donato, University of Messina, Italy*  
*Daniele Schilirò, University of Messina, Italy*

---

**SESSION 2.2 - Benthic Metrosea: Measuring Living Organisms for the Exploration and the Monitoring of Marine Habitats - PART 1**

**Room: Virtual Room #2**

**Chairs:** Giovanni Chimienti, *University of Bari, CoNISMa, Italy*  
Alessandro Cau, *University of Cagliari, Italy*

- 86 **Monitoring the seagrass *Posidonia oceanica* to understand the effects of local disturbances in a marine protected area**  
*Andrea Tursi, University of Bari, CoNISMa, Italy*  
*Francesco Mastrototaro, University of Bari, CoNISMa, Italy*  
*Federica Montesanto, University of Bari, CoNISMa, Italy*  
*Giovanni Chimienti, University of Bari, CoNISMa, Italy*
- 91 **Biometry supporting species identification from underwater images in two Mediterranean Sea urchins**  
*Francesco Mastrototaro, University of Bari, CoNISMa, Italy*  
*Federica Montesanto, University of Bari, CoNISMa, Italy*  
*Andrea Tursi, University of Bari, CoNISMa, Italy*  
*Ricardo Aguilar, OCEANA, Spain*  
*Giovanni Chimienti, University of Bari, CoNISMa, Italy*
- 95 ***Corallium rubrum* and *Eunicella cavolini*: distribution, population structure and co-occurrence in the deep Mediterranean Sea**  
*Laura Carugati, University of Cagliari, Italy*  
*Davide Moccia, University of Cagliari, Italy*  
*Alessandro Cau, University of Cagliari, Italy*  
*Lorenzo Bramanti, Sorbonne Universities, France*  
*Rita Cannas, University of Cagliari, Italy*  
*Maria Cristina Follesa, University of Cagliari, Italy*

---

**SESSION 2.3 - Current Challenges and new Technological Approaches Applied to Marine Mammals and Sea Turtles Conservation - PART 2**

**Room: Virtual Room #3**

**Chairs:** Giulia Cipriano, *University of Bari Aldo Moro, Italy*  
Rosalia Maglietta, *CNR-STIMA, Italy*  
Aylin Akkaya, *DMAD-Marine Mammals Research Association*  
Marta Azzolin, *Gaia Research Institute Onlus*

- 100 **Bottlenose dolphins of Montenegro: Abundance Estimation and Residency Patterns**  
*Aylin Akkaya, DMAD – Marine Mammals Research Association, Turkey*  
*Natalia Velez, DMAD, IMBRSea, Ghent University, Belgium*  
*Kenn Papadopoulo, DMAD, IMBRSea, Ghent University, Belgium*  
*Noemi Ruegg, DMAD, IMBRSea, Ghent University, Belgium*  
*Tim Awbery, DMAD – Marine Mammals Research Association, Turkey*  
*Cedric Goossens, DMAD, IMBRSea, Ghent University, Belgium*  
*Lucy Abbiss, DMAD – Marine Mammals Research Association, Turkey*
- 105 **The decline of common bottlenose dolphin (*Tursiops truncatus*) presence and group size in Montenegrin waters**  
*Sian McGuinness, DMAD-Marine Mammals Research Association, Turkey*  
*Evie White, DMAD-Marine Mammals Research Association, Turkey*  
*Tim Awbery, DMAD-Marine Mammals Research Association, Turkey*  
*Laura Rudd, DMAD-Marine Mammals Research Association, Turkey*  
*Selina Brouwer, DMAD-Marine Mammals Research Association, Turkey*  
*Aylin Akkaya, DMAD-Marine Mammals Research Association, Turkey*
- 111 **Impact of cetacean watching vessels on Risso's dolphins behaviour in the Gulf of Taranto: preliminary information to regulate dolphin watching**  
*Stefano Bellomo, Jonian Dolphin Conservation, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Francesca Cornelia Santacesaria, Jonian Dolphin Conservation, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Vittorio Pollazzon, Jonian Dolphin Conservation, Italy*  
*Pasquale Ricci, University of Bari, Italy*  
*Rosalia Maglietta, STIIMA, CNR, Italy*  
*Roberto Carlucci, University of Bari, Italy*
- 116 **Vessel based surveys as a tool to fill critical knowledge gap on *Grampus griseus* in the north eastern Aegean Sea**  
*Guido Pietrolungo, Archipelagos Institute of Marine Conservation, Greece*  
*Anastasia Miliou, Archipelagos Institute of Marine Conservation, Greece*  
*Beatriz Tintore, Archipelagos Institute of Marine Conservation, Greece*  
*Thodoris Tsimpidis, Archipelagos Institute of Marine Conservation, Greece*  
*Marta Azzolin, Gaia Research Institute Onlus*

---

### **SESSION 3.1 - Building a Metrology Framework for Ocean Observation**

**Room: Virtual Room #1**

**Chairs:** Jukka Seppälä, *Marine Research Centre of Finnish Environment Institute (SYKE)*  
Paola Picco, *Italian Hydrographic Institute*  
Rajesh Nair, *Istituto Nazionale di Oceanografia e Geofisica Sperimentale (OGS)*  
Florence Salvetat, *Ifremer, France*  
Paola Fisicaro, *Laboratoire national de métrologie et d'essais, France*

- 121 **Transnational FerryBox Monitoring in the Baltic Sea: Common Measures for Quality Assurance**  
*Jukka Seppälä, Finnish Environment Institute, SYKE, Finland*  
*Petri Maunula, Finnish Environment Institute, SYKE, Finland*  
*Noora Haavisto, Finnish Environment Institute, SYKE, Finland*  
*Gregor Rehder, Leibniz Institute for Baltic Sea, Germany*  
*Bengt Karlson, Oceanographic Research Swedish Meteorological and Hydrological Institute, Sweden*  
*Anna Willstrand Wranne, Oceanographic Research Swedish Meteorological and Hydrological Institute, Sweden*  
*Urmas Lips, Tallinn University of Technology, Estonia*  
*Villu Kikas, Tallinn University of Technology, Estonia*  
*Andres Jaanus, University of Tartu, Estonia*  
*Lauri London, University of Tartu, Estonia*  
*Lauri Laakso, Finnish Environment Institute, Finland*

- 126 **MINKE's Transnational and Virtual Access**  
*Joaquin del Rio Fernandez, Universitat Politècnica de Catalunya, Spain*  
*Manolis Ntoumas, HCMR, Greece*  
*Jaume Piera, ICM-CSIC, Spain*
- 130 **The oceanographic metrology community: why, when and how should we build a coordination?**  
*Florence Salvetat, REM/RDT/LDCM, Ifremer, France*  
*Alexandre Allard, REM/RDT/LDCM, Ifremer, France*  
*George Petihakis, Hellenic Centre for Marine Research, Greece*

---

**SESSION 3.2 - Current Challenges and new Technological Approaches Applied to Marine Mammals and Sea Turtles Conservation - PART 3**

**Room: Virtual Room #2**

- Chairs:** Giulia Cipriano, *University of Bari Aldo Moro, Italy*  
Rosalia Maglietta, *CNR-STIMA, Italy*  
Aylin Akkaya, *DMAD-Marine Mammals Research Association*  
Marta Azzolin, *Gaia Research Institute Onlus*
- 134 **Combining Data Sources to Understand the Fine-Scale Distribution and Encounter Rates of Common Dolphins *Delphinus delphis* in one of the busiest waterways in the world, the Istanbul Strait**  
*Tim Awbery, DMAD – Marine Mammals Research Association, Turkey*  
*Aylin Akkaya, DMAD – Marine Mammals Research Association, Turkey*  
*Charlotte C. Smith, Lancaster University, UK*  
*Sheryl Bradley, DMAD – Marine Mammals Research Association, Turkey*  
*Lewis Hawkins, DMAD – Marine Mammals Research Association, Turkey*  
*Tara Terpering, DMAD – Marine Mammals Research Association, Turkey*  
*Hallie Repeta, DMAD – Marine Mammals Research Association, Turkey*  
*Nuala Hanley, DMAD – Marine Mammals Research Association, Turkey*  
*Ally Russel, DMAD – Marine Mammals Research Association, Turkey*  
*Laura Rudd, DMAD – Marine Mammals Research Association, Turkey*  
*Belen Yildirim, DMAD – Marine Mammals Research Association, Turkey*
- 139 **Modelling the distribution of striped dolphins in the first two periods of the Marine Strategy Framework Directive (Gulf of Corinth, Greece)**  
*Marta Azzolin, Gaia Research Institute Onlus, Italy*  
*Sebastien Saintingan, Gaia Research Institute Onlus, Italy*  
*Matteo Costantino, Gaia Research Institute Onlus, Italy*  
*Arianna Zampollo, Gaia Research Institute Onlus, Italy*  
*Antonella Arcangeli, ISPRA, Italy*  
*Irida Maina, HCMR, Greece*  
*Stefanos Kavvadas, HCMR, Greece*  
*Roberto Carlucci, University of Bari, Italy*  
*Cristina Giacomina, University of Turin, Italy*
- 144 **Assessment of genetic diversity of the striped dolphin population in the Gulf of Taranto (Northern Ionian Sea, Central Mediterranean Sea)**  
*Giovanna Linguiti, University of Bari, Italy*  
*Carmelo Fanizza, Jonian Dolphin Organization, Italy*  
*Elena Ciani, University of Bari, Italy*  
*Stefano Bellomo, Jonian Dolphin Organization, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Francesca Cornelia Santacesaria, Jonian Dolphin Organization, Italy*  
*Salvatrice Ciccarese, University of Bari, Italy*  
*Rachele Antonacci, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*



148 **Analysis of the epibiont communities of the loggerhead sea turtle *Caretta caretta* recovered along the southern Italian coasts**

*Giovanni Galluzzo, WWF Policoro, Italy*  
*Gianluca Cirelli, WWF Policoro, Italy*  
*Erika Ottone, WWF Policoro, Italy*  
*Annachiara Pisto, WWF Policoro, Italy*  
*Pasquale Salvemini, WWF Molfetta, Italy*  
*Antonio Colucci, WWF Policoro, Italy*  
*Federica Costantini, Università di Bologna, Italy*  
*Marina Antonia Colangelo, Università di Bologna, Italy*

153 **The role of citizen reports in turtle nests discovery: the case of Samos Island, Greece**

*Guido Pietroluongo, Archipelagos Institute of Marine Conservation, Greece*  
*Anastasia Miliou, Archipelagos Institute of Marine Conservation, Greece*  
*Simone Antichi, Archipelagos Institute of Marine Conservation, Greece*  
*Karthik Ashok, Archipelagos Institute of Marine Conservation, Greece*  
*Francisco Javier Falquina, Archipelagos Institute of Marine Conservation, Greece*  
*Belén Quintana Martín Montalvo, Archipelagos Institute of Marine Conservation, Greece*

---

**SESSION 3.3 - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 1**

**Room: Virtual Room #3**

**Chairs:** Vittorio Bianco, CNR-ISASI, Italy

*Onofrio M. Maragò, Istitute for Chemical-Physical Processes of the National Research Council, Italy*

158 **Detection and analysis of microplastics in the subtropical ocean of Okinawa using micro-Raman Optical Tweezers**

*Domna G. Kotsifaki, Okinawa Institute of Science and Technology Graduate University, Japan*  
*Christina Ripken, Okinawa Institute of Science and Technology Graduate University, Japan*  
*Sile Nic Chormaic, Okinawa Institute of Science and Technology Graduate University, Japan*

163 **Raman Tweezers for single nanoplastic particles analysis in liquid environment**

*Raymond Gillibert, Consiglio Nazionale delle Ricerche, Italy*  
*Alessandro Magazzù, Consiglio Nazionale delle Ricerche, Italy*  
*Maria Grazia Donato, Consiglio Nazionale delle Ricerche, Italy*  
*Antonino Foti, Consiglio Nazionale delle Ricerche, Italy*  
*David Bronte Ciriza, Consiglio Nazionale delle Ricerche, Italy*  
*Onofrio M. Maragò, Consiglio Nazionale delle Ricerche, Italy*  
*Agnese Callegari, University of Gothenburg, Germany*  
*Giovanni Volpe, University of Gothenburg, Germany*  
*Fabienne Lagarde, Le Mans Université, France*  
*Marc Lamy de La Chapelle, Le Mans Université, France*  
*Pietro G. Gucciardi, Consiglio Nazionale delle Ricerche, Italy*

168 **Portable low-cost autofluorescence analyzer for plankton and plastic detection**

*Ulderico Wanderlingh, University of Messina, Italy*  
*Caterina Branca, University of Messina, Italy*  
*Sebastiano Vasi, University of Messina, Italy*

173 **A fractal analysis of the holographic diffraction patterns for detecting microplastics among diatoms**

*Daniele Pirone, CNR-ISASI, Italy*  
*Vittorio Bianco, CNR-ISASI, Italy*  
*Pasquale Memmolo, CNR-ISASI, Italy*  
*Francesco Merola, CNR-ISASI, Italy*  
*Pietro Ferraro, CNR-ISASI, Italy*

178 **Characterizing the ocean with acoustic waves: from seismic oceanography imaging to inversion**

Ana F. Duarte, *Universidade de Lisboa, Portugal*  
André Facchinei, *Universidade de Lisboa, Portugal*  
Luís Matias, *Universidade de Lisboa, Portugal*  
Álvaro Peliz, *Universidade de Lisboa, Portugal*  
Francesco Turco, *University of Otago, New Zealand*  
Leonardo Azevedo, *Universidade de Lisboa, Portugal*

---

**SESSION 4.1 - General Session - PART 1**

**Room: Virtual Room #1**

**Chair:** Ioan Tudosa, *University of Sannio, Italy*

183 **Sensing membranes based on CNT nanocomposites processing for air and water monitoring**

Cristina Craciun, *National Institute for Lasers, Plasma and Radiation Physics, Romania*  
Mihaela Filipescu, *National Institute for Lasers, Plasma and Radiation Physics, Romania*  
Alexandra Palla-Papavlu, *National Institute for Lasers, Plasma and Radiation Physics, Romania*  
Simona Brajnicov, *National Institute for Lasers, Plasma and Radiation Physics, Romania*  
Tatiana Tozar, *National Institute for Lasers, Plasma and Radiation Physics, Romania*  
Fănel Scheaua, *University of Galați, Romania*  
Anca Bonciu, *Bucharest University, Romania*  
Florin Nedelcuț, *University of Galați, Romania*  
Maria Dinescu, *National Institute for Lasers, Plasma and Radiation Physics, Romania*

189 **Monitoring and Surveying from an Underwater Vehicle in SUSHI DROP Project**

A. Lambertini, *University of Bologna, Italy*  
M. Menghini, *University of Bologna, Italy*  
J. Cimini, *University of Bologna, Italy*  
A. Odetti, *CNR – INM, Italy*  
G. Bruzzone, *CNR – INM, Italy*  
M. Bibuli, *CNR – INM, Italy*  
E. Mandanici, *University of Bologna, Italy*  
L. Vittuari, *University of Bologna, Italy*  
P. Castaldi, *University of Bologna, Italy*  
M. Caccia, *CNR – INM, Italy*  
L. De Marchi, *University of Bologna, Italy*

194 **Co-located GNSS station within the Italian National Tide Gauge Network**

Stefano Calcaterra, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Saverio Devoti, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Piera Gambino, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Arianna Orasi, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Luca Parlagreco, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Marco Picone, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Benedetto Porfidia, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*  
Nicola D'Agostino, *INGV-Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
Gabriele Nardone, *ISPRA-Italian Institute for Environmental Protection and Research, Italy*

---

**SESSION 4.2 - Benthic Metrosea: Measuring Living Organisms for the Exploration and the Monitoring of Marine Habitats - PART 2**

**Room: Virtual Room #2**

**Chairs:** Giovanni Chimienti, *University of Bari, CoNISMa, Italy*  
Alessandro Cau, *University of Cagliari, Italy*

- 199 **Megabenthos Underwater Video (MUV): a new device to evaluate species distribution in hard-to-reach marine areas**  
*Tiziana Cillari, Italian Institute of Environmental Protection and Research (ISPRA), Italy*  
*Alessandro Allegra, GRAM Gruppo di Ricerca Applicata al Mare Soc. Coop., Italy*  
*Mar Bosch-Belmar, University of Palermo, Italy*  
*Luca Castriota, Italian Institute of Environmental Protection and Research (ISPRA), Italy*  
*Manuela Falautano, Italian Institute of Environmental Protection and Research (ISPRA), Italy*  
*Giacomo Milisenda, Sicily Marine Centre Stazione Zoologica Anton Dohrn, Italy*  
*Teresa Maggio, Italian Institute of Environmental Protection and Research (ISPRA), Italy*  
*Patrizia Perzia, Italian Institute of Environmental Protection and Research (ISPRA), Italy*  
*Mauro Sinopoli, Sicily Marine Centre Stazione Zoologica Anton Dohrn, Italy*
- 204 **Assessing the Environmental Status of five Sardinian black corals forests via Mesophotic Assemblages Conservation Status Index (MACS)**  
*Davide Moccia, University of Cagliari, Italy*  
*Alessandro Cau, University of Cagliari, Italy*  
*Laura Carugati, University of Cagliari, Italy*  
*Cristina Follesa, University of Cagliari, Italy*
- 209 **Mercury bioindicators across the Mediterranean basin: evidence from a dataset on *Mytilus galloprovincialis***  
*Delia Evelina Bruno, CNR-IIA, Italy*  
*Francesco D'Amore, CNR-IIA, Italy*  
*Francesco De Simone, CNR-IIA, Italy*  
*Mariantonia Bencardino, CNR-IIA, Italy*  
*Aimè Lay-Ekuakille, University of Salento, Italy*  
*Sergio Cinnirella, CNR-IIA, Italy*  
*Francesca Sprovieri, CNR-IIA, Italy*  
*Nicola Pirrone, CNR-IIA, Italy*
- 215 **A non-invasive method to assess the population structure of the whip coral *Ellisella flagellum***  
*Giovanni Chimienti, University of Bari, CoNISMa, Italy*  
*Ricardo Aguilar, OCEANA, Spain*  
*Michela Maiorca, University of Bari, Italy*  
*Francesco Mastrototaro, University of Bari, CoNISMa, Italy*

---

### **SESSION 4.3 - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 2**

**Room: Virtual Room #3**

**Chairs:** Vittorio Bianco, CNR-ISASI, Italy

Pietro G. Gucciardi, *Istituto for Chemical-Physical Processes of the National Research Council, Italy*

- 219 **Digital holography with polarization multiplexing for underwater imaging and descattering**

*Yanmin Zhu, The University of Hong Kong, China*

*Chok Hang Yeung, The University of Hong Kong, China*

*Edmund Y. Lam, The University of Hong Kong, China*

- 224 **Detection of microplastics in a digested complex organic medium by Raman Tweezers**

*Antonino Foti, CNR-IPCF, Italy*

*Luca Nalbone, University of Messina, Italy*

*Maria G. Donato, CNR-IPCF, Italy*

*Onofrio M. Maragò, CNR-IPCF, Italy*

*Filippo Giarratana, University of Messina, Italy*

*Pietro G. Gucciardi, CNR-IPCF, Italy*

- 229 **Compact holographic microscope for imaging flowing microplastics**  
*Teresa Cacace, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Simona Itri, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Monika Rani, University of Brescia, Italy*  
*Stefania Federici, University of Brescia, Italy*  
*Lisa Miccio, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Vittorio Bianco, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Melania Paturzo, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Pietro Ferraro, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*
- 234 **Holographic tracking and imaging of freeswimming *Tetraselmis* by off-axis holographic microscopy**  
*Daniele Sirico, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Elena Cavalletti, Stazione Zoologica Anton Dohrn, Italy*  
*Lisa Miccio, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Vittorio Bianco, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Daniele Pirone, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Pasquale Memmolo, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*  
*Angela Sardo, Stazione Zoologica Anton Dohrn, Italy*  
*Pietro Ferraro, Institute of Applied Sciences and Intelligent Systems (CNR), Italy*

---

**Wednesday, October 6**

---

***SESSION 5.1 - Recent Methodological and Technical Approaches Applied to Conservation of Marine Osteichthyes in a Changing World: Seahorses, Pipefishes and Pelagic Fishes***

**Room: Virtual Room #1**

- Chairs:** *Cataldo Pierri, University of Bari Aldo Moro, Italy*  
*Tamara Lazic, University of Bari Aldo Moro, Italy*  
*Michele Gristina, CNR IAMC, Palermo, Italy*  
*Mauro Sinopoli, Stazione Zoologica Anton Dohrn, Palermo, Italy*
- 239 **Evaluation of the seahorse *Hippocampus guttulatus* home range size at Mar Piccolo of Taranto (Ionian Sea, Central Mediterranean Sea, Italy)**  
*Cataldo Pierri, University of Bari Aldo Moro Bari, Italy*  
*Tamara Lazic, University of Bari Aldo Moro Bari, Italy*  
*Giuseppe Corriero, University of Bari Aldo Moro Bari, Italy*  
*Federico Quattrocchi, IRBIM-CNR, Italy*  
*Roberta Trani, University of Bari Aldo Moro Bari, Italy*  
*Michele Gristina, IAS-CNR, Italy*
- 243 **In situ behavior of wild long-snouted seahorse *Hippocampus guttulatus* Cuvier, 1829**  
*Michele Gristina, IAS-CNR, Italy*  
*Cataldo Pierri, University of Bari Aldo Moro Bari, Italy*  
*Tamara Lazic, University of Bari Aldo Moro Bari, Italy*  
*Davide Spatafora, University of Palermo, Italy*
- 248 **Small scale movements of *Seriola dumerili* under a FAD system in the gulf of Castellammare (NW Sicily)**  
*Mauro Sinopoli, SZN - Anton Dohrn Palermo, Italy*  
*Fabio Badalamenti, IAS-CNR, Italy*  
*Giovanni D'Anna, IAS-CNR, Italy*
- 253 **A global systematic review on ecological distribution of European seahorses *Hippocampus guttulatus* and *Hippocampus hippocampus***  
*Michele Gristina, IAS-CNR, Italy*  
*Cataldo Pierri, University of Bari Aldo Moro Bari, Italy*  
*Tamara Lazic, University of Bari Aldo Moro Bari, Italy*  
*Mauro Sinopoli, SZN - Anton Dohrn Palermo, Italy*

257 **Evaluating DNA metabarcoding to analyze diet composition of wild long-snouted seahorse *Hippocampus guttulatus***

*Tamara Lazic, University of Bari, Italy*  
*Giuseppe Corriero, University of Bari, Italy*  
*Bachir Balech, IBIOM National Research Council, Italy*  
*Frine Cardone, Zoological Station Anton Dohrn, Italy*  
*Michele Deflorio, University of Bari, Italy*  
*Bruno Fosso, IBIOM National Research Council, Italy*  
*Carmela Gissi, University of Bari, Italy*  
*Marinella Marzano, IBIOM National Research Council, Italy*  
*Graziano Pesole, University of Bari, Italy*  
*Monica Santamaria, IBIOM National Research Council, Italy*  
*Michele Gristina, IAS National Research Council, Italy*  
*Cataldo Pierri, University of Bari, Italy*

---

**SESSION 5.2 - Marine Organism Tagging**

**Room: Virtual Room #2**

**Chairs:** Pierluigi Carbonara, *COISPA Tecnologia & Ricerca*  
Uwe Krumme, *Thuenen Institute of Baltic Sea Fisheries*

262 **Use of telemetry sensors as a tool for health/welfare monitoring of European sea bass (*Dicentrarchus labrax*) in aquaculture**

*Sébastien Alfonso, COISPA Tecnologia & Ricerca, Italy*  
*Walter Zupa, COISPA Tecnologia & Ricerca, Italy*  
*Maria-Teresa Spedicato, COISPA Tecnologia & Ricerca, Italy*  
*Giuseppe Lembo, COISPA Tecnologia & Ricerca, Italy*  
*Pierluigi Carbonara, COISPA Tecnologia & Ricerca, Italy*

268 **Size and season matters: diel vertical movement of blue sharks in the southern Adriatic Sea**

*Theda Hinrichs, University Rostock, Germany*  
*Marilena Donnalioia, COISPA Tecnologia & Ricerca, Italy*  
*Walter Zupa, COISPA Tecnologia & Ricerca, Italy*  
*Giulia Prato, WWF Italy*  
*Simone Niedermüller, Mediterranean Marine Initiative, Italy*  
*Pierluigi Carbonara, COISPA Tecnologia & Ricerca, Italy*  
*Uwe Krumme, Thünen-Institute for Baltic Sea Fisheries, Germany*

274 **Characterizing movements of *Palinurus elephas* (Fabr. 1787) as a useful tool in Fully Protected Areas design: the case study of the Sardinian FPAs (central-western Mediterranean)**

*Antonello Mulas, University of Cagliari, Italy*  
*Simone Sbaraglia, University of Cagliari, Italy*  
*Andrea Bellodi, University of Cagliari, Italy*  
*Pierluigi Carbonara, COISPA Tecnologia & Ricerca, Italy*  
*Laura Carugati, University of Cagliari, Italy*  
*Alessandro Cau, University of Cagliari, Italy*  
*Martina Francesca Marongiu, University of Cagliari, Italy*  
*Cristina Porcu, University of Cagliari, Italy*  
*Maria Cristina Follesa, University of Cagliari, Italy*

279 **A tagging experiment as validation study on age and growth of *Raja clavata* (Linnaeus, 1758) in the South Adriatic Sea**

*Marilena Donnalioia, COISPA Tecnologia & Ricerca, Italy*  
*Pierluigi Carbonara, COISPA Tecnologia & Ricerca, Italy*  
*Andrea Bellodi, University of Cagliari, Italy*  
*Cristina Porcu, University of Cagliari, Italy*  
*Letizia Sion, University of Bari, Italy*  
*Maria Cristina Follesa, University of Cagliari, Italy*

- 283 **Eaten by a cormorant: Unexpected return of a tagged Baltic cod**  
*Stefanie Haase, Thünen-Institute of Baltic Sea Fisheries, Germany*  
*Karin Hüsy, Technical University of Denmark, Denmark*  
*Michele Casini, Swedish University of Agricultural Sciences, Sweden*  
*Krzysztof Radtke, National Marine Fisheries Research Institute, Poland*  
*Uwe Krumme, Thünen-Institute of Baltic Sea Fisheries, Germany*
- 

### **SESSION 5.3 - Biotic and Abiotic Interactions as a Proxy for Measuring Change at Sea**

#### **Room: Virtual Room #3**

**Chairs:** Carlotta Nonnis Marzano, *University of Bari Aldo Moro, Italy*

*Stefania Lisco, University of Bari Aldo Moro, Italy*

*Maria Mercurio, University of Bari Aldo Moro, Italy*

*Caterina Longo, University of Bari Aldo Moro, Italy*

*Adriana Giangrande, University of Salento, Italy*

- 288 **Interaction between physical and biological process of a carbonate pocket beach – Le Dune (Ionian Sea, Southern Italy)**

*Isabella Lapietra, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

*Stefania Nunzia Lisco, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

*Salvatore Milli, Università Sapienza, Italy*

*Massimo Moretti, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

- 292 **A multidisciplinary approach for evaluating Sabellaria bioconstructions: the case study of Torre Mileto (Northern Gargano coast, Adriatic sea)**

*Stefania Nunzia Lisco, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

*Cataldo Pierri, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

*Frine Cardone, Stazione Zoologica Anton Dohrn, Italy*

*Maria Silvia Binetti, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

*Giuseppe Corriero, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

*Adriana Giangrande, University of Salento, Italy*

*Maria Flavia Gravina, Università di Tor vergata, Italy*

*Massimo Moretti, Università degli Studi di Bari "Aldo Moro" Bari, Italy*

- 297 **Local diversity and recruitment on artificial substrates: Mytilus galloprovincialis (Lamarck, 1819) vs Sabella spallanzanii (Gmelin, 1791) (Mediterranean Sea)**

*Daniele Arduini, University of Salento, Italy*

*Jacopo Borghese, University of Salento, Italy*

*Marco Lezzi, ARPA - Regional Agency for Prevention, the Environment and Energy, Italy*

*Cinzia Gravili, University of Salento, Italy*

*Maria Flavia Gravina, University of Rome "Tor Vergata", Conisma, Italy*

*Adriana Giangrande, University of Salento, Italy*

- 302 **Long term observations on Sabella spallanzanii (Annelida, Sabellidae) in the Mar Grande of Taranto (Ionian Sea). The influence of alien species**

*Jacopo Borghese, University of Salento, Italy*

*Daniele Arduini, University of Salento, Italy*

*Cataldo Pierri, University of Bari Aldo Moro, Italy*

*Tamara Lazic, University of Bari Aldo Moro, Italy*

*Adriana Giangrande, University of Salento, Italy*

- 307 **A "living hotel" in the Taranto seas (NW Ionian Sea): preliminary data on associated macrofauna of the Mediterranean alien Paraleucilla magna (Porifera, Calcarea)**

*Roberta Trani, University of Bari Aldo Moro, Italy*

*Tamara Lazic, University of Bari Aldo Moro, Italy*

*Maria Mercurio, University of Bari Aldo Moro, Italy*

*Carlotta Nonnis Marzano, University of Bari Aldo Moro, Italy*

*Caterina Longo, University of Bari Aldo Moro, Italy*

312 **Multi-trophic species interactions in a marine bioremediation model assessment**

*Roberta Trani, University of Bari Aldo Moro, Italy*  
*Maria Concetta de Pinto, University of Bari Aldo Moro, Italy*  
*Maria Scrascia, University of Bari Aldo Moro, Italy*  
*Cataldo Pierri, University of Bari Aldo Moro, Italy*  
*Maria Mercurio, University of Bari Aldo Moro, Italy*  
*Carlotta Nonnis Marzano, University of Bari Aldo Moro, Italy*  
*Michele Deflorio, University of Bari Aldo Moro, Italy*  
*Caterina Longo, University of Bari Aldo Moro, Italy*

---

**SESSION 6.1 - Advances on Geomatic Measurements for the Safety of Ship and Navigation**

**Room: Virtual Room #1**

**Chairs:** *Antonio Angrisano, University of Messina, Italy*  
*Silvio Del Pizzo, University of Naples "Parthenope", Italy*  
*Vincenzo Piscopo, University of Naples "Parthenope", Italy*

316 **GNSS software defined receiver pseudorange error assessment**

*Matteo Cutugno, Parthenope University, Italy*  
*Umberto Robustelli, Parthenope University, Italy*  
*Giovanni Pugliano, University of Naples Federico II, Italy*

322 **Incidence of spectrum estimation methods on the fatigue life assessment of mooring lines for floating offshore wind turbines**

*Vincenzo Piscopo, University of Naples "Parthenope", Italy*  
*Antonio Scamardella, University of Naples "Parthenope", Italy*  
*Giovanni Battista Rossi, University of Genova, Italy*  
*Francesco Crenna, University of Genova, Italy*  
*Marta Berardengo, University of Genova, Italy*

328 **EGNOS Performances assessment in maritime navigation**

*Anna Inmac, University of Naples Parthenope, Italy*  
*Antonio Angrisano, University of Messina, Italy*  
*Silvio Del Pizzo, University of Naples Parthenope, Italy*  
*Mario Vultaggio, G. Fortunato University, Italy*  
*Salvatore Gaglione, University of Naples Parthenope, Italy*

333 **Tuning of ARMA models for mono-modal sea spectrum estimation**

*Marta Berardengo, University of Genova, Italy*  
*Giovanni Battista Rossi, University of Genova, Italy*  
*Francesco Crenna, University of Genova, Italy*

338 **A preliminary study on an optical system for nautical and maritime traffic monitoring**

*Silvio Del Pizzo, University of Naples "Parthenope", Italy*  
*Salvatore Troisi, University of Naples "Parthenope", Italy*  
*Antonio Angrisano, University of Messina, Italy*  
*Fabiana Di Ciaccio, University of Naples "Parthenope", Italy*  
*Salvatore Gaglione, University of Naples "Parthenope", Italy*

---

**SESSION 6.2 - Technical Applications, Current Challenges and Future Perspectives for the Mitigation of Fishery and Aquaculture Impacts on Marine Ecosystems**

**Room: Virtual Room #2**

**Chairs:** *Pasquale Ricci, CoNISMa, University of Bari, Italy*  
*Nicola Trivellin, University of Padova, Italy*  
*Antonella Petrocelli, Water Research Institute of National Research Council, Italy*  
*Giuseppe Denti, Water Research Institute of Nation Research Council, Italy*

- 344 **LED technology to increase the purse seine fishery performance**  
*Pasquale Ricci, University of Bari, Italy*  
*Nicola Trivellin, University of Padova, Italy*  
*Daniela Cascione, University of Bari, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Maurizio Ingrosso, University of Bari, Italy*  
*Viviana Teresa Orlandi, University of Insubria, Italy*  
*Roberto Carlucci, University of Bari, Italy*
- 349 **Integrated study for the assessment of an inshore mariculture plant impact on the surrounding environment (Ionian Sea)**  
*Adriana Giangrande, University of Salento, Italy*  
*Margherita Licciano, University of Salento, Italy*  
*Daniele Arduini, University of Salento, Italy*  
*Jacopo Borghese, University of Salento, Italy*  
*Cataldo Pierri, University of Bari Aldo Moro, Italy*  
*Roberta Trani, University of Bari Aldo Moro, Italy*  
*Caterina Longo, University of Bari Aldo Moro, Italy*  
*Antonella Petrocelli, IRSA - CNR, Italy*  
*Patrizia Ricci, IRSA - CNR, Italy*  
*Giorgio Alabiso, IRSA - CNR, Italy*  
*Rosa Anna Cavallo, IRSA - CNR, Italy*  
*Maria Immacolata Acquaviva, IRSA - CNR, Italy*  
*Marcella Narracci, IRSA - CNR, Italy*  
*Loredana Stabili, IRSA - CNR, Italy*
- 355 **Light at 410 nm controls the growth of skin bacteria from *Chelidonichthys lucerna* (Osteichthyes: Triglidæ)**  
*Viviana Teresa Orlandi, University of Insubria, Italy*  
*Fabrizio Bolognese, University of Insubria, Italy*  
*Nicola Trivellin, University of Padova, Italy*  
*Pasquale Ricci, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*
- 360 **Defining a procedure for integrating multiple oceanographic variables in ensemble models of marine species distribution**  
*Diego Panzeri, University of Trieste, INOGS, Italy*  
*Simone Libralato, National Institute of Oceanography and Applied Geophysics, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Isabella Bitetto, COISPA Tecnologia & Ricerca, Italy*  
*Maria Teresa Spedicato, COISPA Tecnologia & Ricerca, Italy*  
*Francesco Masnadi, National Research Council of Italy*  
*Pasquale Ricci, University of Bari, Italy*  
*Giuseppe Scarcella, National Research Council of Italy*  
*Tommaso Russo, University of Rome Tor Vergata, Italy*  
*Walter Zupa, COISPA Tecnologia & Ricerca, Italy*  
*Lorenzo D'Andrea, University of Rome Tor Vergata, Italy*  
*Nedo Vrgoc, Institute of Oceanography and Fisheries, Croatia*  
*Cosimo Solidoro, National Institute of Oceanography and Applied Geophysics, Italy*
- 366 **Preliminary results of plastic substitution in mussel farming with natural vegetal fibers**  
*Antonella Petrocelli, CNR, Italy*  
*Giuseppe Portacci, CNR, Italy*  
*Emanuele De Gasperis, Azienda Agricola Carmine Srl, Italy*  
*Ester Cecere, CNR, Italy*

---

## **SESSION 6.3 - General Session - Part 2**

**Room:** Virtual Room #3

**Chairs:** Claudio De Capua, *Università Mediterranea di Reggio Calabria, Italy*



- Pasquale Fabio Filianoti, *Università Mediterranea di Reggio Calabria, Italy*
- 371 **UKF-based fault detection and isolation algorithm for IMU sensors of Unmanned Underwater Vehicles**  
*Egidio D'Amato, Università degli Studi di Napoli "Parthenope", Italy*  
*Claudio De Capua, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*  
*Pasquale Fabio Filianoti, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*  
*Luana Gurnari, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*  
*Vito Antonio Nardi, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*  
*Immacolata Notaro, Università degli Studi della Campania "L. Vanvitelli", Italy*  
*Valerio Scordamaglia, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*
- 377 **Modular Pod Wells Turbine Array: a Preliminary Assessment**  
*Enrico Petritoli, Università degli Studi "Roma Tre", Italy*  
*Fabio Leccese, Università degli Studi "Roma Tre", Italy*
- 382 **A low-cost and low-burden secure solution to track small-scale fisheries**  
*Anna Nora Tassetti, National Research Council, Italy*  
*Alessandro Galdelli, Università Politecnica delle Marche, Italy*  
*Jacopo Pulcinella, National Research Council, Italy*  
*Adriano Mancini, Università Politecnica delle Marche, Italy*  
*Luca Bolognini, National Research Council, Italy*
- 388 **Underwater acoustic source localization using a multi-robot system: the DAMPS project**  
*Benedetto Allotta, University of Firenze, Italy*  
*Gianluca Antonelli, University of Cassino and Southern Lazio, Italy*  
*Antonino Bongiovanni, University of Genova, Italy*  
*Andrea Caiti, University of Pisa, Italy*  
*Riccardo Costanzi, University of Pisa, Italy*  
*Daniela De Palma, University of Salento, Italy*  
*Paolo Di Lillo, University of Cassino and Southern Lazio, Italy*  
*Matteo Franchi, University of Firenze, Italy*  
*Petrika Gjanci, WSense, University of Roma "La Sapienza", Italy*  
*Giovanni Indiveri, University of Genova, Italy*  
*Chiara Petrioli, University of Roma "La Sapienza", Italy*  
*Alessandro Ridolfi, University of Firenze, Italy*  
*Enrico Simetti, University of Genova, Italy*

---

### **SESSION 7.1 - General Session - Part 3**

**Room: Virtual Room #1**

**Chair:**

- 394 **Blockchain-based Maritime Monitoring System**  
*Warley Paulo Freire, Brazilian Navy, Brazil*  
*Wilson S. Melo Jr, National Institute of Metrology, Quality, and Technology, Brazil*  
*Vinicius D. do Nascimento, CISMAR, Brazilian Navy, COPPE/Sistemas-UFRJ, Brazil*  
*Alan Oliveira de Sã, Universidade de Lisboa, Portugal*
- 400 **A Visibility Graph approach for path planning and real-time collision avoidance on maritime unmanned systems**  
*Egidio D'Amato, Università degli Studi di Napoli "Parthenope", Italy*  
*Vito Antonio Nardi, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*  
*Immacolata Notaro, Università degli Studi della Campania "L. Vanvitelli", Italy*  
*Valerio Scordamaglia, Università degli Studi "Mediterranea" di Reggio Calabria, Italy*
- 406 **Cyber Security Risk Management for Ports - A Systematic Literature Review**  
*Barbara M. Drummond, Fluminense Federal University, Brazil*  
*Raphael C. S. Machado, Fluminense Federal University, Brazil*
- 412 **River Survey Evolution by means of Autonomous Surface Vehicles**  
*Marco Bibuli, CNR-INM, Italy*  
*Roberta Ferretti, CNR-INM, Italy*  
*Angelo Odetti, CNR-INM, Italy*  
*Tiziano Cosso, Gter srl, Italy*

---

## **SESSION 7.2 - General Session - Part 4**

**Room: Virtual Room #2**

**Chair:** Giovanni Randazzo, *University of Messina, Italy*

418 **UAV Photogrammetry-based Mapping of the Pocket Beaches of Isola Bella Bay, Taormina (Eastern Sicily)**

*Anselme Muzirafuti, University of Messina, Italy*

*Maria Cascio, University of Messina, Italy*

*Stefania Lanza, University of Messina, Italy*

*Giovanni Randazzo, University of Messina, Italy*

423 **Unsupervised classification based approach for coastline extraction from Sentinel-2 imagery**

*Emanuele Alcaras, Parthenope University of Naples, Italy*

*Pier Paolo Amoroso, Parthenope University of Naples, Italy*

*Valerio Baiocchi, Sapienza University of Rome, Italy*

*Ugo Falchi, Parthenope University of Naples, Italy*

*Claudio Parente, Parthenope University of Naples, Italy*

428 **Design of a mobile platform for monitoring the aerial and aquatic environment**

*Silviu Epure, University of Galați, Romania*

*Adrian Leopa, University of Galați, Romania*

*Niculai Hauk, University of Galați, Romania*

*Valentin Bardahan, University of Galați, Romania*

433 **Trace elements accumulation could influence parasitic load and hematological parameters in a central mediterranean population of Lesser Spotted Dogfish *Scyliorhinus canicula***

*Francesca Romana Reïnero, Sharks Studies Center-Scientific Institute, Italy*

*Concetta Milazzo, University of Calabria, Italy*

*Marco Minervino, University of Calabria, Italy*

*Cristian Marchio, University of Calabria, Italy*

*Mariacristina Filice, University of Calabria, Italy*

*Laura Bevacqua, University of Calabria, Italy*

*Gianni Giglio, University of Calabria, Italy*

*Francesco Luigi Leonetti, University of Calabria, Italy*

*Primo Micarelli, Sharks Studies Center-Scientific Institute, Italy*

*Sandro Tripepi, University of Calabria, Italy*

*Donatella Barca, University of Calabria, Italy*

*Emilio Sperone, University of Calabria, Italy*

---

## **SESSION 7.3 - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 3**

**Room: Virtual Room #3**

**Chairs:** Angela Sardo, *Stazione Zoologica Anton Dohrn*

438 **Fluorescence Microscopy and Molecular Biology Methods as Tools for Assessing the Toxic Effects of Heavy Metals on Sea Urchin Development**

*Giovanna Romano, Stazione Zoologica Anton Dohrn, Italy*

444 **The effect of the detergent on microfibre release during the washing process of polyester textiles**

*Michela Volgare, National Research Council of Italy*

*Rachele Castaldo, National Research Council of Italy*

*Maria Emanuela Errico, National Research Council of Italy*

*Gennaro Gentile, National Research Council of Italy*

*Roberto Avolio, National Research Council of Italy*

*Veronica Ambrogì, University of Naples Federico II, Italy*

*Mariacristina Cocca, National Research Council of Italy*

449 **Microalgae as potential bioindicators for heavy metal pollution**

*Elena Cavalletti, Stazione Zoologica Anton Dohrn, Italy*

*Angela Sardo, Stazione Zoologica Anton Dohrn, Italy*

*Vittorio Bianco, CNR-ISASI, Italy*

*Lisa Miccio, CNR-ISASI, Italy*

*Daniele Pirone, CNR-ISASI, Italy*

*Daniele Sirico, CNR-ISASI, Italy*

*Marika Valentino, CNR-ISASI, Italy*

*Michele Spinelli, University of Naples Federico II, Italy*

*Pietro Ferraro, CNR-ISASI, Italy*