

# **2022 IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters (MetroSea 2022)**

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# WORKSHOP PROGRAM

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**Monday, October 3**

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## ***Session 1.2 - General Session - PART I***

**Room: Benedictine Monastery - ROOM 1**

**Chairs:** Luca De Vito, *University of Sannio, Italy*  
Adam Gauci, *University of Malta, Malta*

**1 Monitoring Sea Current and Marine litter Transport using a low cost approaches**

*Marco Bianucci, ISMAR-CNR, Italy*

*Silvia Merlino, ISMAR-CNR, Italy*

*Marina Locritani, Istituto Nazionale di Geofisica e Vulcanologia, Italy*

*Marco Paterni, IFC-CNR, Italy*

**7 An extreme negative sea level in the Mediterranean Basin: San Giorgio case study compared with Adriatic Sea**

*Claudia Stramaccioni, Italian Institute for Environmental Protection and Research, Italy*

*Andrea Bianco, Italian Institute for Environmental Protection and Research, Italy*

*Saverio Devoti, Italian Institute for Environmental Protection and Research, Italy*

*Domenico Macaluso, WWF Sicilia Area Mediterranea Agrigento, Italy*

*Giuseppe Mazzotta, WWF Sicilia Area Mediterranea Agrigento, Italy*

*Arianna Orasi, Italian Institute for Environmental Protection and Research, Italy*

*Luca Parlagreco, Italian Institute for Environmental Protection and Research, Italy*

*Marco Picone, Italian Institute for Environmental Protection and Research, Italy*

*Gabriele Nardone, Italian Institute for Environmental Protection and Research, Italy*

*Maurizio Ferla, Italian Institute for Environmental Protection and Research, Italy*

**12 Seabird monitoring data in the Gulf of Taranto (Northern Ionian Sea, Central-eastern Mediterranean Sea)**

*Cristiano Liuzzi, Ass.ne Centro Studi de Romita, Italy*

*Stefano Bellomo, Jonian Dolphin Conservation, 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*

*Giulia Cipriano, University of Bari, Italy*

*Roberto Carlucci, University of Bari, Italy*

**17 Integrated monitoring approach for habitat mapping**

*Luca Montagnini, IRBIM-CNR, Italy*

*Tania Manarini, IRBIM-CNR, Italy*

*Enrico Nicola Armelloni, IRBIM-CNR, University of Bologna, Italy*

*Elena Manini, IRBIM-CNR, Italy*

*Fabrizio Moro, IRBIM-CNR, Italy*

*Pierluigi Penna, IRBIM-CNR, Italy*

*Martina Scanu, IRBIM-CNR, University of Bologna, Italy*

*Alessandra Spagnolo, IRBIM-CNR, Italy*

*Pierluigi Strafella, IRBIM-CNR, Italy*

*Anna Nora Tassetti, IRBIM-CNR, Italy*

*Gianna Fabi, IRBIM-CNR, Italy*

- 23 **A low-cost measurement system for microplastic detection in marine environment: A proof of concept**  
*Giovanni Gugliandolo, University of Messina, Italy*  
*Antonino Quattrocchi, University of Messina, Italy*  
*Mariangela Latino, University of Messina, Italy*  
*Giovanni Crupi, University of Messina, Italy*  
*Nicola Donato, University of Messina, Italy*
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### **Session 1.3 - Artificial Intelligence and Deep Learning Applications for Environmental Monitoring and Preservation**

**Room: Benedictine Monastery - ROOM 2**

**Chairs:** Fabiana Di Ciaccio, *Parthenope University of Naples, Italy*  
Paolo Russo, *University of Rome "La Sapienza", Italy*

- 28 **Detecting beach litter in drone images using deep learning**  
*Roland Pfeiffer, University of Malta, Malta*  
*Gianluca Valentino, University of Malta, Malta*  
*Reuben A. Farrugia, University of Malta, Malta*  
*Emanuele Colica, University of Malta, Malta*  
*Sebastiano D'Amico, University of Malta, Malta*  
*Stefano Calleja, University of Malta, Malta*
- 33 **Artificial Intelligence for mussels farm quality assessment and prediction**  
*Ciro Giuseppe De Vita, University of Naples "Parthenope", Italy*  
*Gennaro Mellone, University of Naples "Parthenope", Italy*  
*Francesca Barchiesi, Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche "T. Rosati", Italy*  
*Diana Di Luccio, University of Naples "Parthenope", Italy*  
*Angelo Ciaramella, University of Naples "Parthenope", Italy*  
*Raffaele Montella, University of Naples "Parthenope", Italy*
- 39 **Wave forecasts in the proximity of a harbour area based on artificial neural networks**  
*Claudio Iuppa, University of Messina, Italy*  
*Luca Cavallaro, University of Catania, Italy*  
*Elisa Castro, University of Catania, Italy*  
*Rosaria Ester Musumeci, University of Catania, Italy*  
*Carla Faraci, University of Messina, Italy*  
*Lilia Carlo, University of Messina, Italy*  
*Giovanni Passalacqua, University of Messina, Italy*  
*Enrico Foti, University of Catania, Italy*
- 44 **Deep models optimization on embedded devices to improve the orientation estimation task at sea**  
*Paolo Russo, Sapienza University of Rome, Italy*  
*Fabiana Di Ciaccio, Parthenope University of Naples, Italy*
- 50 **Real-time monocular depth estimation on embedded devices: challenges and performances in terrestrial and underwater scenarios**  
*Lorenzo Papa, Sapienza University of Rome, Italy*  
*Paolo Russo, Sapienza University of Rome, Italy*  
*Irene Amerini, Sapienza University of Rome, Italy*
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### **Session 1.4 - IDMAR Project: Technologies for a Distributed Laboratory for Marine Researches**

**Room: Benedictine Monastery - ROOM 3**

**Chairs:** Francesco Italiano, *INGV, Italy*  
Giacomo Cuttone, *INFN Laboratori del Sud di Catania, Italy*

- 56 **Quality Assurance on IDMAR submarine infrastructure**  
*Giuseppina Larosa, INFN - Laboratori Nazionali del Sud, Italy*  
*Domenico Santonocito, INFN - Laboratori Nazionali del Sud, Italy*  
*Giacomo Cuttone, INFN - Laboratori Nazionali del Sud, Italy*

- 61 **IDMAR Infrastructure: the Junction Box and shore station optical network**  
*Sara Pulvirenti, INFN - Laboratori Nazionali del Sud, Italy*  
*Jan-Willem Schmelling, NIKHEF, The Netherlands*  
*Antonio D'Amico, NIKHEF, The Netherlands*  
*Emidio Giorgio, INFN - Laboratori Nazionali del Sud, Italy*  
*Salvatore Aurnia, INFN - Laboratori Nazionali del Sud, Italy*
- 66 **Monitoring system and test equipment for the calibration procedure of the KM3NeT Detection Units in IDMAR**  
*Giovanna Ferrara, INFN - LNS, Italy*
- 71 **An autonomous deep sea, high-capacity, supply system deployed in the IDMAR underwater infrastructure**  
*Fabio Longhitano, Istituto Nazionale di Fisica Nucleare, Italy*  
*Emanuele Leonora, Istituto Nazionale di Fisica Nucleare, Italy*  
*Riccardo Bruno, Istituto Nazionale di Fisica Nucleare, Italy*  
*Angelo Orlando, Istituto Nazionale di Fisica Nucleare, Italy*  
*Nunzio Randazzo, Istituto Nazionale di Fisica Nucleare, Italy*  
*Giorgio Riccobene, Istituto Nazionale di Fisica Nucleare, Italy*  
*Salvatore Viola, Istituto Nazionale di Fisica Nucleare, Italy*
- 76 **The multi-PMT optical modules for the IDMAR research infrastructure**  
*Emanuele Leonora, INFN - Sezione di Catania, Italy*  
*Riccardo Bruno, INFN - Sezione di Catania, Italy*  
*Fabio Longhitano, INFN - Sezione di Catania, Italy*  
*Nunzio Randazzo, INFN - Sezione di Catania, Italy*
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**Tuesday, October 4**

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***Session 2.1 - Organic Chemistry and Marine Ecosystems: From Pollution to Nanotechnology***

**Room: Castle of Milazzo - Old Dome**

**Chairs:** *Roberta Ragni, Chemistry Department, University of Bari, Italy*  
*Pietro Cotugno, Chemistry Department, University of Bari, Italy*  
*Danilo Vona, Chemistry Department, University of Bari, Italy*

- 81 **Tethya meloni (Porifera, Demospongiae): a promising bioremediator species and source of marine natural products**  
*Roberta Trani, University of Bari Aldo Moro, Italy*  
*Maria Concetta de Pinto, University of Bari Aldo Moro, Italy*  
*Maria Scarscia, University of Bari Aldo Moro, Italy*  
*Pere Ferriol, University of the Balearic Islands, Spain*  
*Angel Garcia Raso, University of the Balearic Islands, Spain*  
*Caterina Longo, University of Bari Aldo Moro, Italy*
- 86 **Intra- and interspecific variation in electrophoretic profiles of Tethya spp.: an integration to morfological classification system**  
*Eugenia Gentile, University of Bari, Italy*  
*Tiziana Latronico, University of Bari, Italy*  
*Giuseppe Corriero, University of Bari, Italy*  
*Carlotta Nonnis Marzano, University of Bari, Italy*  
*Grazia Maria Liuzzi, University of Bari, Italy*

**91 Green production of biofuels from fish discards using supercritical Carbon Dioxide as the extraction solvent**

*Valeria Sini, University of Bari, Italy*  
*Angela Carluccio, University of Salento, Italy*  
*Mariella Marangi, University of Bari, Italy*  
*Roberta Ragni, University of Bari, Italy*  
*Gianfranco D'Onghia, University of Bari, Italy*  
*Pietro Cotugno, University of Bari, Italy*

**96 The role of cytochrome c in the chromate reduction by *Rhodobacter sphaeroides***

*Maria Varsalona, Consiglio Nazionale delle Ricerche, University of Bari, Italy*  
*Benny Danilo Belviso, Consiglio Nazionale delle Ricerche, Italy*  
*Rossella Labarile, Consiglio Nazionale delle Ricerche, University of Bari, Italy*  
*Francesca Italiano, Consiglio Nazionale delle Ricerche, University of Bari, Italy*  
*Gianluca Maria Farinola, University of Bari, Italy*  
*Massimo Trotta, Consiglio Nazionale delle Ricerche, Italy*  
*Rocco Caliandro, Consiglio Nazionale delle Ricerche, Italy*

**101 Chemically decorated microalgae for environmental application**

*Annarita Flemma, University of Bari, Italy*  
*Piero Cotugno, University of Bari, Italy*  
*Gianluca Maria Farinola, University of Bari, Italy*  
*Cesar Vicente-Garcia, University of Bari, Italy*  
*Stefania R. Cicco, ICCOM, CNR, Italy*  
*Danilo Vona, University of Bari, Italy*  
*Giorgio Rizzo, University of Bari, Italy*  
*Angela Falciatore, Institut de Biologie Physico-Chimique, France*  
*Roberta Ragni, University of Bari, Italy*

**106 Efficient removal of a model textile dye from sea water by Polydopamine coated Diatomaceous Earth**

*Erica Colaprico, University of Bari, Italy*  
*Stefania R. Cicco, ICCOM, CNR, Italy*  
*Danilo Vona, University of Bari, Italy*  
*Giorgio Rizzo, University of Bari, Italy*  
*Carola Ricciardelli, University of Bari, Italy*  
*Gianluca Maria Farinola, University of Bari, Italy*

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**Session 2.2 - Remote Sensing and other Geomatics Techniques for Surveying and Monitoring Marine and Coastal Areas - Part 1**

**Room: Benedictine Monastery - ROOM 1**

**Chairs:** *Claudio Parente, Parthenope University of Naples, Italy*  
*Francesco Giuseppe Figliomeni, Parthenope University of Naples, Italy*

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

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*Silvia Ascione, University of Naples "Parthenope", Italy*  
*Silvio Del Pizzo, University of Naples "Parthenope", Italy*  
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*Vincenzo Piscopo, University of Naples "Parthenope", Italy*  
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*Valerio Baiocchi, Sapienza University of Rome, Italy*  
*Alessandro Bosman, Consiglio Nazionale delle Ricerche, Italy*  
*Sante Francesco Rende, Istituto Superiore per la Protezione e la Ricerca Ambientale, Italy*

- 127 **Using bi-temporal Sentinel-2 images to detect the effects of Hunga Tonga–Hunga Ha’apai eruption**  
*Emanuele Alcaras, Parthenope University of Naples, Italy*  
*Pier Paolo Amoroso, Parthenope University of Naples, Italy*  
*Ugo Falchi, Parthenope University of Naples, Italy*  
*Francesco Giuseppe Figliomeni, Parthenope University of Naples, Italy*  
*Claudio Parente, Parthenope University of Naples, Italy*
- 133 **Performance of WAVY Ocean Lagrangian Drifters for Surface Characterization of Ocean Dynamic Structures**  
*Daniel Mihai Toma, Universitat Politècnica de Catalunya, Spain*  
*Matias Carandell, Universitat Politècnica de Catalunya, Spain*  
*Joaquín del Río, Universitat Politècnica de Catalunya, Spain*
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### **Session 2.3 - General Session - Part 2**

**Room: Benedictine Monastery - ROOM 2**

**Chair:** Sebastiano D’Amico, *University of Malta, Malta*

- 138 **Reliability Analysis of an IoT Satellite Facility for Remote Monitoring and Asset Tracking within Marine Environments**  
*Ada Fort, University of Siena, Italy*  
*Marco Mugnaini, University of Siena, Italy*  
*Giacomo Peruzzi, University of Siena, Italy*  
*Alessandro Pozzebon, University of Padova, Italy*
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*Anselme Muzirafuti, University of Messina, Italy*  
*Giovanni Randazzo, University of Messina, Italy*  
*Stefania Lanza, University of Messina, Italy*
- 148 **Orthogonal waves and currents interacting with a fixed rippled bed**  
*Alessia Ruggeri, University of Messina, Italy*  
*Rosaria Ester Musumeci, University of Catania, Italy*  
*Carla Faraci, University of Messina, Italy*
- 153 **Underwater mussel culture grounds: precision technologies for management purposes**  
*Anna Nora Tassetti, National Research Council, Italy*  
*Alessandro Galdelli, Università Politecnica delle Marche, Italy*  
*Adriano Mancini, Università Politecnica delle Marche, Italy*  
*Elisa Punzo, National Research Council, Italy*  
*Luca Bolognini, National Research Council, Italy*
- 158 **Flexible battery-powered data acquisition system for sub-marine monitoring**  
*Pasquale Daponte, University of Sannio, Italy*  
*Luca De Vito, University of Sannio, Italy*  
*Francesco Italiano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Gianluca Lazzaro, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Francesco Picariello, University of Sannio, Italy*  
*Sergio Scirè Scappuzzo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Ioan Tudosa, University of Sannio, Italy*
- 

### **Session 2.4 - The Marine Hazard Project: New Technologies for Reducing Risks of Anthropic Impact in Coastal and Deep Sea Waters**

**Room: Benedictine Monastery - ROOM 3**

**Chair:** Francesco Italiano, *INGV, Italy*

*Alcide Di Sarra, ENEA Casaccia, Italy*



- 164 **Electrochemical stripping determination of trace heavy metals using screen-printed electrodes as a versatile approach toward a mobile sensing platform**  
*Kaveh Moulaei, University of Messina, Italy*  
*Viviana Bressi, University of Messina, Italy*  
*Angelo Ferlazzo, University of Messina, Italy*  
*Daniela Iannazzo, University of Messina, Italy*  
*Claudia Espro, University of Messina, Italy*  
*Giovanni Neri, University of Messina, Italy*
- 168 **Metal-tolerant bacteria for monitoring Mediterranean Shallow Hydrothermal environments: the case studies of Panarea**  
*Erika Arcadi, Stazione Zoologica "Anton Dohrn", Italy*  
*Valentina Sciutteri, Stazione Zoologica "Anton Dohrn", Italy*  
*Marilena Sanfilippo, Stazione Zoologica "Anton Dohrn", Italy*  
*Teresa Romeo, Stazione Zoologica "Anton Dohrn", Italy*  
*Carmen Rizzo, Stazione Zoologica "Anton Dohrn", CNR-ISP, Italy*  
*Michael Tangherlini, Stazione Zoologica "Anton Dohrn", Italy*  
*Franco Andaloro, Stazione Zoologica "Anton Dohrn", Italy*  
*Rosario Calogero, Stazione Zoologica "Anton Dohrn", Italy*  
*Valentina Esposito, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Italy*
- 174 **Creation of a literature database for the localization, cartography and evaluation of deposits by GSI**  
*Mauro Caccavale, ISMAR - CNR, INGV, Italy*  
*Enza Quinci, IAS - CNR, Italy*  
*Salvatore Passaro, ISMAR - CNR, Italy*
- 180 **The integrated Marine Hazard webGIS platform for management of open and coastal ocean in Sicily**  
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*Luigi La Porta, ENEA, Italy*  
*Alessia Crosara, ENEA, Italy*  
*Luigi De Rosa, ENEA, Italy*  
*Tatiana Di Iorio, ENEA, Italy*  
*Antonio Iaccarino, ENEA, Italy*  
*Daniela Meloni, ENEA, Italy*  
*Mattia Pecci, Sapienza University, ENEA, Italy*  
*Salvatore Aronica, IAS - CNR, Italy*  
*Ignazio Fontana, IAS - CNR, Italy*  
*Giovanni Giacalone, IAS - CNR, Italy*  
*Giorgio Tranchida, IAS - CNR, Italy*  
*Fabrizio Anello, ENEA, Italy*  
*Flavio Borfecchia, ENEA, Italy*  
*Alessandro Calabrese, ENEA, Italy*  
*Simone Colella, ISMAR - CNR, Italy*  
*Federica Colucci, ENEA, Italy*  
*Salvatore Marullo, ENEA, Italy*  
*Carla Micheli, ENEA, Italy*  
*Francesco Monteleone, ENEA, Italy*  
*Giandomenico Pace, ENEA, Italy*  
*Salvatore Piacentino, ENEA, Italy*  
*Damiano Sferlazzo, ENEA, Italy*  
*Alcide di Sarra, ENEA, Italy*
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*Anna Saroni, University of Ferrara, Italy*  
*Alessandra Sciarra, INGV, Italy*  
*Roberta Ivaldi, Italian Hydrographic Institute, Italy*  
*Maurizio Demarte, Italian Hydrographic Institute, Italy*  
*Federica Maurantonio, Italian Hydrographic Institute, Italy*  
*Massimo Coltorti, University of Ferrara, Italy*



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### **Session 3.1 - Data System Networking and Interoperability Technology and Methodology - PART1**

**Room:** Castle of Milazzo - Old Dome

**Chair:** Antonio Novellino, ETT, Italy

**190 Recommendations on data harmonization for ocean observation networks**

*Dominique Obaton, IFREMER, France*  
*Abed El Rahman Hassoun, GEOMAR, Germany*  
*Begona Perez Gomez, Puertos del Estado, Spain*  
*Antonio Novellino, ETT, Italy*  
*Thierry Carval, IFREMER, France*  
*Julien Mader, AZTI, Spain*  
*Alessandra Giorgetti, OGS, Italy*  
*Thomsen Soeren, LOCEAN IPSL UPMC, France*  
*Sylvie Pouliquen, IFREMER, France*  
*Victor Turpin, OCEANOPS, France*  
*Laurant Coppola, VLFR, France*

**193 Revamping data system and portal in the Basque Operational Oceanography**

*Lohitzune Solabarrieta, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Andrea del Campo, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*David Alvarez, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Aritz Abalia, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Asier Nieto, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Irati Epelde, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Iñaki de Santiago, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Irantzu Zubiaur, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Luis Ferrer, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Ivan Manso, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Ivan Saez, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Roland Garnier, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Manuel González, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Anna Rubio, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Julien Mader, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*Pedro Liria, AZTI-Marine Research Basque Research and Technology Alliance, Spain*  
*José Antonio Aranda, Dirección de Atención de Emergencias y Meteorología*  
*Marco Alba, ETT, Italy*  
*Andrea Asioli, ETT, Italy*  
*Antonio Novellino, ETT, Italy*  
*Francesco Misurale, ETT, Italy*

**198 Blue-Cloud: Exploring and demonstrating the potential of Open Science for ocean sustainability**

*Dick Schaap, MARIS, The Netherlands*  
*Pasquale Pagano, Consiglio Nazionale delle Ricerche, Italy*  
*Leonardo Candela, Consiglio Nazionale delle Ricerche, Italy*  
*Massimiliano Assante, Consiglio Nazionale delle Ricerche, Italy*

**203 New approach to underwater technologies for innovative, lowcost ocean observation (NAUTILOS): operational field primary capture system**

*Antonio Novellino, ETT, Italy*  
*Flávio Augusto Bastos da Cruz Martins, University of Algarve, Portugal*  
*Gabriele Pieri, CNR - ISTI, Italy*  
*Francesco Misurale, ETT, Italy*

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### **Session 3.2 - Remote Sensing and other Geomatics Techniques for Surveying and Monitoring Marine and Coastal Areas - Part 2**

**Room:** Benedictine Monastery - ROOM 1

**Chairs:** Claudio Parente, Parthenope University of Naples, Italy

Francesco Giuseppe Figliomeni, Parthenope University of Naples, Italy

**209 Improvement in the Post-Processing of Wave Buoy Data**

*Giovanni Battista Rossi, University of Genova, Italy*  
*Gabriele Nardone, ISPRA, CN-COS, Italy*  
*Marco Picone, ISPRA, CN-COS, Italy*  
*Giulio Settanta, ISPRA, CN-COS, Italy*  
*Francesco Crenna, University of Genova, Italy*  
*Marta Berardengo, University of Genova, Italy*

**215 Monitoring the Posidonia Meadows structure through underwater photogrammetry: a case study**

*Francesca Russo, Parthenope University of Naples, Italy*  
*Silvio Del Pizzo, Parthenope University of Naples, Italy*  
*Fabiana Di Ciaccio, Parthenope University of Naples, Italy*  
*Salvatore Troisi, Parthenope University of Naples, Italy*

**220 Anomaly detection in Sonar images: application of saliency filters**

*Lorenzo Bazzarello, CSSN La Spezia, Italian Navy*  
*Osvaldo Pulpito, CSSN ITE Livorno, Italian Navy*  
*Francesco Cannarsa, CSSN La Spezia, Italian Navy*  
*Matteo Bresciani, University of Pisa, Italy*  
*Riccardo Costanzi, University of Pisa, Italy*  
*Nicola Acito, University of Pisa, Italy*  
*Marco Diani, Naval Academy, Italian Navy*  
*Giovanni Corsini, University of Pisa, Italy*  
*Andrea Caiti, University of Pisa, E. Piaggio Research Center, Italy*

**225 Machine Learning for Quantification of Land Transitions in Italy Between 2000 and 2018 and Prediction for 2050**

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

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***Session 3.3 - Towards the Conservation of Marine Mammals and Sea Turtles in the Framework of Marine Spatial Planning and the Nature Conservation: New Technologies and Approaches - Part 1***

**Room: Benedictine Monastery - ROOM 2**

**Chair:** *Giulia Cipriano, University of Bari, Italy*

**231 Generalized additive models for Risso's dolphin group size estimation in the Gulf of Taranto (Northern Ionian Sea, Central-eastern Mediterranean Sea)**

*Rosalia Maglietta, National Research Council, Italy*  
*Leonardo Saccotelli, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Vito Telesca, University of Basilicata, Italy*  
*Giovanni Dimauro, University of Bari, Italy*  
*Salvatore Causio, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Rita Lecci, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Ivan Federico, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Carla Cherubini, Jonian Dolphin Conservation, Italy*  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Giovanni Coppini, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*

**236 Variation in the emission rates of striped dolphin's vocalizations recorded in the Gulf of Taranto (Northern Ionian Sea, Central Mediterranean Sea)**

*Giulia Cipriano, University of Bari, Italy*  
*Serena Gatto, Jonian Dolphin Conservation, Italy*  
*Carla Cherubini, Jonian Dolphin Conservation, Italy*  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Francesca Cornelia Santacesaria, Jonian Dolphin Conservation, Italy*  
*Stefano Bellomo, Jonian Dolphin Conservation, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Elena Papale, University of Torino, Italy*  
*Giuseppa Buscaino, National Research Council, Italy*  
*Rosalia Maglietta, National Research Council, Italy*  
*Pasquale Ricci, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*

**242 Preliminary analysis of Risso's dolphin social structure in the Gulf of Taranto (Northern Ionian Sea, Central Eastern Mediterranean Sea)**

*Francesca Cornelia Santacesaria, Jonian Dolphin Conservation, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Stefano Bellomo, Jonian Dolphin Conservation, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Nicola Clemente, Jonian Dolphin Conservation, Italy*  
*Roberto Crugliano, Jonian Dolphin Conservation, Italy*  
*Simone Lalinga, Jonian Dolphin Conservation, Italy*  
*Rosalia Maglietta, National Research Council, Italy*  
*Vittorio Pollazzon, Jonian Dolphin Conservation, Italy*  
*Giulia Cipriano, University of Bari, Italy*

**247 Length-Weight relationships and consumption rates of the striped dolphin (*Stenella coeruleoalba*) in the Mediterranean Sea**

*Maurizio Ingrosso, University of Bari Aldo Moro, Italy*  
*Giulia Cipriano, University of Bari Aldo Moro, Italy*  
*Francesca Cornelia Santacesaria*  
*Daniela Cascione, CoNISMa, University of Bari Aldo Moro, Italy*  
*Maria Silvia Labriola, Sapienza University of Rome, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Rosalia Maglietta, National Research Council, Italy*  
*Pasquale Ricci, University of Bari Aldo Moro, Italy*  
*Roberto Carlucci, University of Bari Aldo Moro, Italy*

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**Session 3.4 - Benthic Metrosea: Measuring Living Organisms for the Exploration and the Monitoring of Marine Habitats**

**Room: Benedictine Monastery - ROOM 3**

**Chair:** Giovanni Chimienti, CoNISMa, University of Bari, Italy

**252 Observations on benthic assemblages impacted by hydraulic dredges in the Southern Adriatic Sea (Central Mediterranean Sea)**

*Daniela Cascione, CoNISMa, University of Bari, Italy*  
*Cristina Turco, CoNISMa, University of Bari, Italy*  
*Simona Amodio, CoNISMa, University of Bari, Italy*  
*Maurizio Ingrosso, University of Bari, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Porzia Maiorano, CoNISMa, University of Bari, Italy*  
*Pasquale Ricci, University of Bari, Italy*

**257 A non-invasive monitoring method to assess the composition of megabenthic communities in semisubmerged marine caves**

*Maurizio Spaccavento, CoNISMa, University of Bari, Italy*  
*Francesco Mastrototaro, CoNISMa, University of Bari, Italy*  
*Andrea Tursi, CoNISMa, University of Bari, Italy*  
*Federica Montesanto, University of Nebraska-Lincoln, USA*  
*Antonella Bottalico, University of Bari, Italy*  
*Caterina Longo, University of Bari, Italy*  
*Giovanni Chimienti, CoNISMa, University of Bari, Italy*

**262 Assessing the conservation status of *Posidonia oceanica* at Tremiti Archipelago (Adriatic Sea): a comparative analysis of different classification systems**

*Andrea Tursi, CoNISMa, University of Bari, Italy*  
*Francesco Mastrototaro, CoNISMa, University of Bari, Italy*  
*Antonella Bottalico, CoNISMa, University of Bari, Italy*  
*Federica Montesanto, University of Nebraska-Lincoln, USA*  
*Giovanni Chimienti, CoNISMa, University of Bari, Italy*

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**Session 4.1 - Data System Networking and Interoperability Technology and Methodology - PART2**

**Room:** Castle of Milazzo - Old Dome

**Chair:** Antonio Novellino, ETT, Italy

**267 Democratizing the computational environmental marine data science: using the High-Performance Cloud-Native Computing for inert transport and diffusion Lagrangian modelling**

*Gennaro Mellone, University of Naples "Parthenope", Italy*  
*Ciro Giuseppe De Vita, University of Naples "Parthenope", Italy*  
*Enrico Zambianchi, University of Naples "Parthenope", Italy*  
*David Expòsito Singh, University Carlos III of Madrid, Spain*  
*Diana Di Luccio, University of Naples "Parthenope", Italy*  
*Raffaele Montella, University of Naples "Parthenope", Italy*

**273 Uptake, explore and champion best practices of Citizen Science (CS) projects**

*Antonio Novellino, ETT, Italy*  
*Haizea Jimenez, Surfrider Foundation Europe, France*  
*Gabriele Pieri, CNR - ISTI, Italy*  
*Silvia Merlino, CNR - ISMAR, Italy*  
*Mariana Machado Toffolo, University of Bologna, Italy*  
*Eva Chatzinikolaou, HCMR, Greece*  
*Giuseppe Suaria, CNR - ISMAR, Italy*  
*Stefano Goffredo, University of Bologna, Italy*  
*Sandra Granquinho, Eurocean, Portugal*  
*Luca Tixi, Lega Navale, Italy*  
*Sandra Sa, Eurocean, Portugal*

**276 @lgawarning - A comprehensive service for in situ phytoplankton monitoring**

*Francesco Misurale, ETT, Italy*  
*Marco Alba, ETT, Italy*  
*Susanna Alloisio, ETT, Italy*

**279 Workflow and Standards to interoperate in Real Time/Near Real Time with EMODnet Ingestion**

*Antonio Novellino, ETT, Italy*  
*Francesco Misurale, ETT, Italy*  
*Christian Autermann, 52°N Spatial Information Research GmbH, Germany*  
*Patrick Gorringer, SMHI, Sweden*  
*Marco Alba, ETT, Italy*  
*Dick Schaap, MARIS BV, The Netherlands*  
*Enrico Boldrini, CNR-IIA, Italy*  
*Sissy Iona, HCMR, Greece*

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## Session 4.2 - Elasmobranchs as a Measure of Healthy Status of the Sea

**Room: Benedictine Monastery - ROOM 1**

**Chair:** Mauro Sinopoli, *SZN, Italy*

**282 Spatial variability of the reproductive traits of Rajidae family (Elasmobranchii, Rajiformes) across the Italian waters**

*Cristina Porcu, University of Cagliari, Italy*  
*Marilena Donnaloia, COISPA Tecnologia & Ricerca, Italy*  
*Pierluigi Carbonara, COISPA Tecnologia & Ricerca, Italy*  
*Loredana Casciaro, COISPA Tecnologia & Ricerca, Italy*  
*Antonello Mulas, University of Cagliari, Italy*  
*Maria Cristina Follesa, University of Cagliari, Italy*

**287 Reproductive biology of the longnose spiny dogfish from the South Adriatic Sea**

*Marilena Donnaloia, COISPA Tecnologia & Ricerca, Italy*  
*Sébastien Alfonso, COISPA Tecnologia & Ricerca, Italy*  
*Pierluigi Carbonara, COISPA Tecnologia & Ricerca, Italy*

**293 Sightings of large elasmobranchs from the Mediterranean: new data from MEDLEM database in the last five years (2017-2022)**

*Samira Gallo, University of Calabria, Italy*  
*Cecilia Mancusi, Environmental Protection Agency - Tuscany Region, Italy*  
*Abudaya Mohammed, National Research Centre, Palestine*  
*Bakiu Rigers, University of Tirana, Albania*  
*Adi Barash, University of Haifa, Israel*  
*Monica Barone, FAO - Food and Agriculture Organization*  
*Massimiliano Bottaro, Stazione Zoologica Anton Dohrn, Italy*  
*Pierluigi Carbonara, COISPA, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Ilija Cetkovic, University of Montenegro, Montenegro*  
*Simona Clò, Medshark, Italy*  
*Eleonora De Sabata, Medshark, Italy*  
*Samira Enajjar, INSTM, Tunisia*  
*Esmail Shakman, University of Tripoli, Lybia*  
*Fulvio Garibaldi, University of Genoa, Italy*  
*Gianni Giglio, University of Calabria, Italy*  
*Ioannis Giovos, Environmental Organisation for the Preservation of the Aquatic Ecosystems, Greece*  
*Hakan Kabasakal, Ichthyological Research Society, Turkey*  
*Luca Lanteri, University of Genoa, Italy*  
*Stefano Lelli, FAO - Food and Agriculture Organization*  
*Lovrenc Lipej, Marine Biology Station Piran, Slovenia*  
*Carlotta Mazzoldi, University of Padova, Italy*  
*Primo Micarelli, Sharks Studies Centre, Italy*  
*Gabriel Morey, Save The Med Foundation, Spain*  
*Stefano Moro, Sapienza University of Rome, Italy*  
*Mohamed Nejmeddine Bradai, INSTM, Tunisia*  
*Giuseppe Notarbartolo di Sciara, Tethys Research Institute, Italy*  
*Chiara Romano, University of Calabria Italy*  
*Bechir Saidi, INSTM, Tunisia*  
*Alen Soldo, University of Split, Croatia*  
*Emilio Sperone, University of Calabria, Italy*  
*Francesco Tiralongo, University of Catania, Italy*  
*Bruno Zava, Wilderness Environmental Studies, Italy*  
*Fabrizio Serena, IRBIM-CNR, Italy*

**298 Even sharks are waiting for manna from the heaven: terrestrial birds as stomach content remains in sharks from Central Mediterranean**

*Chiara Romano, University of Calabria, Italy*  
*Samira Gallo, University of Calabria, Italy*  
*Giorgia Zicarelli, University of Messina, Italy*  
*Gianni Giglio, University of Calabria, Italy*  
*Francesco Luigi Leonetti, University of Calabria, Italy*  
*Concetta Milazzo, University of Calabria, Italy*  
*Ilaria Bernabò, University of Calabria, Italy*  
*Toni Mingozi, University of Calabria, Italy*  
*Emilio Sperone, University of Calabria, Italy*

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**Session 4.3 - Towards the Conservation of Marine Mammals and Sea Turtles in the Framework of Marine Spatial Planning and the Nature Conservation: New Technologies and Approaches - Part 2**

**Room: Benedictine Monastery - ROOM 2**

**Chair:** Giulia Cipriano, *University of Bari, Italy*

**303 A low-cost approach in acoustic monitoring of dolphin presence**

*Rocco De Marco, National Research Council, Italy*  
*Francesco Di Nardo, Università Politecnica delle Marche, Italy*  
*Alessandro Lucchetti, National Research Council, Italy*  
*Massimo Virgili, National Research Council, Italy*  
*Andrea Petetta, National Research Council, Italy*  
*Daniel Li Veli, National Research Council, Italy*  
*Laura Screpanti, Università Politecnica delle Marche, Italy*  
*Veronica Bartolucci, Università Politecnica delle Marche, Italy*  
*David Scaradozzi, Università Politecnica delle Marche, Italy*

**308 Modelling dynamic effects of fishery on odontocetes through a food-web modelling approach in the Gulf of Taranto (Northern Ionian Sea)**

*Daniela Cascione, CoNISMa, University of Bari, Italy*  
*Roberto Carlucci, University of Bari, Italy*  
*Giulia Cipriano, University of Bari, Italy*  
*Maurizio Ingrosso, University of Bari, Italy*  
*Caterina Varvara, University of Bari, Italy*  
*Francesca Cornelia Santacesaria, Jonian Dolphin Conservation, Italy*  
*Carmelo Fanizza, Jonian Dolphin Conservation, Italy*  
*Pasquale Ricci, University of Bari, Italy*

**314 Preliminary study on the coexistence of cetaceans with anthropogenic activities in the Gulf of Catania, Ionian Sea**

*Clara Monaco, University of Catania, Italy*  
*Iuri Peri, University of Catania, Italy*  
*Enrico Giarrusso, University of Catania, Italy*  
*Carla Tumino, University of Catania, Italy*  
*Alessandra Raffa, University of Catania, Italy*



- 320 **Preliminary study on monitoring the loggerhead sea turtle (*Caretta caretta*) using satellite tracking in the Adriatic and Ionian Seas**  
*Rosalia Maglietta, CNR-STIIMA, Italy*  
*Daniele Piazzolla, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Viviana Piermattei, Università degli Studi della Tuscia, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Elena Scagnoli, Università degli Studi della Tuscia, Italy*  
*Rita Lecci, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Marco Marcelli, Università degli Studi della Tuscia, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Matteo Scuro, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Giuseppe Andrea De Lucia, CNR-IAS, Italy*  
*Giacomo Marzano, Consorzio di gestione di Torre Guaceto, Italy*  
*Francesco De Franco, Consorzio di gestione di Torre Guaceto, Italy*  
*Leonardo Saccotelli, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Rocco Caccioppoli, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*  
*Giovanni Coppini, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy*

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## Wednesday, October 5

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### **Session 5.1 - Assessing Physical and Biological Features of Coralligenous and other Mesophotic Bioconstructions in a Changing Marine Environment**

**Room:** Castle of Milazzo - Old Dome

**Chairs:** *Carlotta Nonnis Marzano, University of Bari Aldo Moro*  
*Pere Ferriol, University of the Balearic Islands*

- 324 **Three-dimensional habitat-forming species in scleractinian mesophotic ecosystems along the Apulian coast (Italy)**  
*Guadalupe Giménez, University of Bari Aldo Moro, Italy*  
*Maria Mercurio, University of Bari Aldo Moro, Italy*  
*Cataldo Pierri, University of Bari Aldo Moro, Italy*  
*Caterina Longo, University of Bari Aldo Moro, Italy*
- 329 **Reproduction of reef-building scleractinians (Cnidaria, Anthozoa) from the Apulian coral reef: preliminary data and relationship with temperature**  
*Daniela Semeraro, University of Bari Aldo Moro, Italy*  
*Maria Mastrodonato, University of Bari Aldo Moro, Italy*  
*Maria Mercurio, University of Bari Aldo Moro, Italy*  
*Marco Vito Guglielmi, University of Bari Aldo Moro, Italy*  
*Giuseppe Corriero, University of Bari Aldo Moro, Italy*  
*Carlotta Nonnis Marzano, University of Bari Aldo Moro, Italy*
- 334 **Insights into the impact of marine litter on coralligenous structuring species in Apulia (Italy)**  
*Guadalupe Giménez, University of Bari Aldo Moro, Italy*  
*Cataldo Pierri, University of Bari Aldo Moro, Italy*  
*Isabella Coccia, University of Bari Aldo Moro, Italy*  
*Caterina Longo, University of Bari Aldo Moro, Italy*  
*Carlotta Nonnis Marzano, University of Bari Aldo Moro, Italy*  
*Maria Mercurio, University of Bari Aldo Moro, Italy*
- 339 **An image analysis procedure to study the growth patterns of present-day coralligenous assemblages**  
*Alessia de Luca, University of Bari Aldo Moro, Italy*  
*Stefania Lisco, University of Bari Aldo Moro, Italy*  
*Pasquale Acquafredda, University of Bari Aldo Moro, Italy*  
*Guadalupe Anhai Gimenez, University of Bari Aldo Moro, Italy*  
*Massimo Moretti, University of Bari Aldo Moro, Italy*



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## **Session 5.2 - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - Part 1**

**Room: Benedictine Monastery - ROOM 1**

**Chairs:** Vittorio Bianco, *National Research Council, Italy*  
Pietro Ferraro, *National Research Council, Italy*

**344 Intelligent Digital Holographic systems to counteract microplastic pollution in marine waters**

*Marika Valentino, National Research Council, Italy*  
*Daniele Pirone, National Research Council, Italy*  
*Jaromir Béhal, National Research Council, Italy*  
*Simona Itri, National Research Council, Italy*  
*Lisa Miccio, National Research Council, Italy*  
*Pasquale Memmolo, National Research Council, Italy*  
*Vittorio Bianco, National Research Council, Italy*  
*Pietro Ferraro, National Research Council, Italy*

**349 Detection of Plastic Nanoparticles in Aqueous Environment Based on Optical Manipulation in Combination with Raman Spectroscopy**

*Silvie Bernatova, Czech Academy of Sciences, Czech Republic*  
*Martin Kizovsky, Czech Academy of Sciences, Czech Republic*  
*Maria Grazia Donato, National Research Council, Italy*  
*Antonino Foti, National Research Council, Italy*  
*Pavel Zemanek, Czech Academy of Sciences, Czech Republic*  
*Ota Samek, Czech Academy of Sciences, Czech Republic*  
*Onofrio M. Marago, National Research Council, Italy*  
*Jan Jezek, Czech Academy of Sciences, Czech Republic*  
*Pietro G. Gucciardi, National Research Council, Italy*

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## **Session 5.3 - Emerging Contaminants to Marine Environment: Sources, Types and Measurement of Effects - Part 1**

**Room: Benedictine Monastery - ROOM 2**

**Chairs:** Ermelinda Prato, *Water Research Institute - National Research Council*  
Francesca Biandolino, *Water Research Institute - National Research Council*

**353 Microplastic evidence and removal from the seaweed bioremediator *Chaetomorpha linum***

*Loredana Stabili, University of Salento, IRSA - CNR, Italy*  
*Margherita Licciano, University of Salento, Italy*  
*Livia Giotta, University of Salento, Italy*  
*Antonella Petrocelli, IRSA - CNR, Italy*  
*Ester Cecere, IRSA - CNR, Italy*  
*Elisa Quarta, IRSA - CNR, Italy*

**358 Discrete multivariate probability distributions of microplastic settling/rising velocity in the marine environment**

*Paolo Bello, University of Rome "La Sapienza", Italy*  
*Agnese Pini, University of Rome "La Sapienza", Italy*  
*Simone Zazzini, University of Rome "La Sapienza", Italy*  
*Paolo Monti, University of Rome "La Sapienza", Italy*  
*Giovanni Leuzzi, University of Rome "La Sapienza", Italy*

**363 Effects of emerging pollutants on the larval development of the bivalve *Mytilus galloprovincialis***

*Martina Russo, Ca' Foscari University, Italy*  
*Marco Picone, Ca' Foscari University, Italy*  
*Davide Marchetto, Ca' Foscari University, Italy*  
*Gabriele Giuseppe Distefano, Ca' Foscari University, Italy*  
*Annamaria Volpi Ghirardini, Ca' Foscari University, Italy*

**368 The use of feathers of Sandwich tern (*Thalasseus sandvicensis*) for the non-destructive monitoring of emerging pollutants in coastal habitats**

*Marco Picone, Ca' Foscari University, Italy*  
*Gabriele Giuseppe Distefano, Ca' Foscari University, Italy*  
*Roberta Zangrando, National Research Council, Italy*  
*Andrea Gambaro, Ca' Foscari University, Italy*  
*Annamaria Volpi Ghirardini, Ca' Foscari University, Italy*

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**Session 5.4 - The Role of Satellite Remote Sensing in the UN Decade of Ocean Science for Sustainable Development**

**Room: Benedictine Monastery - ROOM 3**

**Chairs:** *Andrea Buono, Parthenope University of Naples, Italy*  
*Giuseppe Foti, National Oceanography Centre, United Kingdom*  
*Giuseppe Grieco, National Research Council, Italy*

**373 Model-based analysis of X-band scattering from oilcovered sea surface using SAR imagery**

*Tingyu Meng, University of Chinese Academy of Sciences, China*  
*Ferdinando Nunziata, Parthenope University of Naples, Italy*  
*Xiaofeng Yang, University of Chinese Academy of Sciences, China*  
*Maurizio Migliaccio, Parthenope University of Naples, Italy*

**378 Sea Surface Wind Estimation Using COSMO-SkyMed SAR Imagery**

*Ferdinando Nunziata, Parthenope University of Naples, Italy*  
*Maurizio Migliaccio, Parthenope University of Naples, Italy*  
*Andrea Buono, Parthenope University of Naples, Italy*  
*Emanuele Ferrentino, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Matteo Alparone, Parthenope University of Naples, Italy*  
*Stefano Zecchetto, Consiglio Nazionale delle Ricerche, Italy*  
*Andrea Zanchetta, Consiglio Nazionale delle Ricerche, Italy*  
*Marcos Portabella, Instituto de Ciencias del Mar, Spain*  
*Giuseppe Grieco, Consiglio Nazionale delle Ricerche, Italy*

**383 Correction of SeaWinds Normalized Radar Cross Sections for improved coastal winds**

*Giuseppe Grieco, Consiglio Nazionale delle Ricerche, Italy*  
*Ad Stoffelen, Koninklijk Nederlands Meteorologisch Instituut, The Netherlands*  
*Anton Verhoef, Koninklijk Nederlands Meteorologisch Instituut, The Netherlands*  
*Jur Vogelzang, Koninklijk Nederlands Meteorologisch Instituut, The Netherlands*  
*Marcos Portabella, Instituto de Ciencias del Mar, Spain*

**388 Retrieval and multi-temporal characterization of oil spills from multi-sensor earth observation imagery**

*Ramona Pelich, Luxembourg Institute of Science and Technology, Luxembourg*  
*Tran Vu La, Luxembourg Institute of Science and Technology, Luxembourg*  
*Marco Chini, Luxembourg Institute of Science and Technology, Luxembourg*  
*Patrick Matgen, Luxembourg Institute of Science and Technology, Luxembourg*

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**Poster Session**

**Room: Castle of Milazzo - Benedictine Monastery**

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

**393 Microcell electrochemical technique in seawater applied on dissimilar joints of aluminum alloy and carbon steel obtained by friction stir welding**

*Amani Khaskhoussi, University of Messina, Italy*  
*Guido Di Bella, University of Messina, Italy*  
*Chiara Borsellino, University of Messina, Italy*  
*Luigi Calabrese, University of Messina, Italy*  
*Edoardo Proverbio, University of Messina, Italy*

**398 From the dry land to deep sea: research infrastructures for the distributed laboratory over the sea**

*Francesco Italiano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*

- 403 **A multidisciplinary and morphotectonic-based approach to define potential offshore rising locations of geochemical fluids/gases, using GIS analysis: the case of study of Palinuro, Campania, southern Italy**  
*Antonina Lisa Gagliano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Marco Meschis, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Roberto D'Aleo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Marcella Di Bella, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Giuseppe Sabatino, University of Messina, Italy*  
*Davide Romano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Manfredi Longo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Cinzia Giuseppina Caruso, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Gianluca Lazzaro, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Sergio Scirè Scappuzzo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Francesco Italiano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*
- 408 **Cliff instability evidence from UAV survey observation**  
*Aniello Florio, University of Naples Parthenope, Italy*  
*Matteo Cutugno, University of Naples Federico II, Italy*  
*Umberto Robustelli, University of Naples Parthenope, Italy*  
*Diana Di Luccio, University of Naples Parthenope, Italy*  
*Giovanni Pugliano, University of Naples Federico II, Italy*  
*Guido Benassai, University of Naples Parthenope, Italy*
- 414 **Speciation of mercury in sediments: exploratory study**  
*Maria Teresa Berducci, ISPRA, CN-LAB, Italy*  
*Chiara Maggi, ISPRA, CN-LAB, Italy*
- 419 **On the time evolution of the d'Iberville glacier using C-band SAR data**  
*Mozhgan Zahriban Hesari, University of Naples Parthenope, Italy*  
*Andrea Buono, University of Naples Parthenope, Italy*  
*Giuseppe Aulicino, University of Naples Parthenope, Italy*  
*Maurizio Migliaccio, University of Naples Parthenope, Italy*
- 424 **Shallow sea monitoring systems for the "Distributed Laboratory over the Sea" in Panarea island**  
*Cinzia G. Caruso, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Gianluca Lazzaro, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Manfredi Longo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Sergio Scirè Scappuzzo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Francesco Italiano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*
- 429 **The ICE board: a Hi-Rel electronics board for sub-nanosecond synchronization of submarine instrumentation**  
*Fabrizio Ameli, INFN - Sez. ROMA1, Italy*  
*Carlo Alessandro Nicolau, INFN - Sez. ROMA1, Italy*  
*Emidio Giorgio, INFN - Laboratori Nazionali del Sud, Italy*  
*Giorgio Riccobene, INFN - Laboratori Nazionali del Sud, Italy*  
*Emanuele Leonora, INFN - Sez. CATANIA, Italy*  
*Sara Pulvirenti, INFN - Laboratori Nazionali del Sud, Italy*  
*Rosanna Cocimano, INFN - Laboratori Nazionali del Sud, Italy*  
*Nunzio Randazzo, INFN - Sez. CATANIA, Italy*  
*Salvatore Viola, INFN - Laboratori Nazionali del Sud, Italy*  
*Angelo Orlando, INFN - Laboratori Nazionali del Sud, Italy*  
*Giuseppina Larosa, INFN - Laboratori Nazionali del Sud, Italy*  
*Klaus Leismuller, INFN - Laboratori Nazionali del Sud, Italy*  
*Antonio D'Amico, NIKHEF, The Netherlands*  
*Jan-Willem Schmelling, NIKHEF, The Netherlands*
- 435 **Satellite observations and in-situ measurements to monitor Maldivian atolls over time**  
*Vittoria Puzone, University of Naples Parthenope, Italy*  
*Diana Di Luccio, University of Naples Parthenope, Italy*  
*Maurizio Migliaccio, University of Naples Parthenope, Italy*  
*Guido Benassai, University of Naples Parthenope, Italy*

**441 Underwater node for electrical power distribution and optical data transmission for multidisciplinary science in the Mediterranean Sea**

*Fabrizio Ameli, Istituto Nazionale di Fisica Nucleare, Italy*  
*Simone Biagi, Istituto Nazionale di Fisica Nucleare, Italy*  
*Rosanna Cocimano, Istituto Nazionale di Fisica Nucleare, Italy*  
*Antonio D'amico, NIKHEF, The Netherlands*  
*Emidio Giorgio, Istituto Nazionale di Fisica Nucleare, Italy*  
*Klaus Leismuller, Istituto Nazionale di Fisica Nucleare, Italy*  
*Giuseppina Larosa, Istituto Nazionale di Fisica Nucleare, Italy*  
*Emanuele Leonora, Istituto Nazionale di Fisica Nucleare, Italy*  
*Carlo Nicolau, Istituto Nazionale di Fisica Nucleare, Italy*  
*Angelo Orlando, Istituto Nazionale di Fisica Nucleare, Italy*  
*Sara Pulvirenti, Istituto Nazionale di Fisica Nucleare, Italy*  
*Nunzio Randazzo, Istituto Nazionale di Fisica Nucleare, Italy*  
*Giorgio Riccobene, Istituto Nazionale di Fisica Nucleare, Italy*  
*Jan-Willem Schmelling, NIKHEF, The Netherlands*  
*Salvatore Viola, Istituto Nazionale di Fisica Nucleare, Italy*

**446 DOP analysis using AIS R-MODE stations combined with GNSS satellites into the Venice Lagoon**

*Antonio Angrisano, University of Messina, Italy*  
*Silvia Ascione, University of Naples Parthenope, Italy*  
*Giovanni Cappello, University of Naples Parthenope, Italy*  
*Silvio Del Pizzo, University of Naples Parthenope, Italy*  
*Sebastiano Messina, University of Naples Parthenope, Italy*  
*Salvatore Gaglione, University of Naples Parthenope, Italy*

**451 GNSS data for monitoring some movements on the island of Ischia**

*Valerio Baiocchi, Sapienza University of Rome, Italy*  
*Grazia Pietrantonio, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Renè Schnider, Happysurvey, Switzerland*  
*Luigi Cardone, Sapienza University of Rome, Italy*  
*Felicia Vatore, Sapienza University of Rome, Italy*

**456 Real-time moving target detection in infrared maritime scenarios**

*Osvaldo Pulpito, University of Pisa, CSSN ITE, Italy*  
*Nicola Acito, University of Pisa, Italy*  
*Marco Diani, Naval Academy, Italian Navy, Italy*  
*Giovanni Corsini, University of Pisa, Italy*  
*Raffaele Grasso, NATO STO - CMRE, Italy*  
*Gabriele Ferri, NATO STO - CMRE, Italy*  
*Alberto Grati, NATO STO - CMRE, Italy*  
*Kevin LePage, NATO STO - CMRE, Italy*  
*Konstantina Bereta, Marine Traffic, Greece*  
*Dimitris Zissis, University of the Aegean, Greece*

**462 Monitoring sea pollution using wireless QCM-based sensors**

*Filippo Battaglia, University of Messina, Italy*  
*Giovanni Gugliandolo, University of Messina, Italy*  
*Giuseppe Campobello, University of Messina, Italy*  
*Nicola Donato, University of Messina, Italy*

- 468 **Testing strategy for new ocean sensors**  
*John Barton, Tyndall National Institute, Ireland*  
*Jordi Salat, CSIC-ICM, Spain*  
*Emilio R. García-Ladona, CSIC-ICM, Spain*  
*Jaume Piera Fernández, CSIC-ICM, Spain*  
*Joaquín I. Salvador, CSIC-ICM, Spain*  
*Pedro G. Fernández, CSIC-ICM, Spain*  
*Fabio Antognarelli, CNR-IAS, Italy*  
*Andrea Satta, CNR-IAS, Italy*  
*Paolo Magni, CNR-IAS, Italy*  
*Alberto Ribotti, CNR-IAS, Italy*
- 474 **Bibliometric Analysis on Cyber-Attacks in Naval Sensors and Systems**  
*Carlos Eduardo Pires de Albuquerque, Fluminense Federal University, Brazil*  
*Raphael Carlos Santos Machado, Fluminense Federal University, Brazil*  
*Alan Oliveira de Sá, Universidade de Lisboa, Portugal*  
*Carlos Rafael Barros de Toledo, Brazilian Navy, Brazil*
- 479 **Salt Content Detection Using a Microwave Sensor**  
*Xiue Bao, School of Integrated Circuits and Electronics, Tangshan Research Institute, China*  
*Zeyu Wang, Tangshan Research Institute, China*  
*Juncheng Bao, Div. ESAT-WAVECORE, KU Leuven, Belgium*  
*Giovanni Gugliandolo, University of Messina, Italy*  
*Haoyun Yuan, School of Integrated Circuits and Electronics, China*  
*Zhibo Zhao, School of Integrated Circuits and Electronics, China*  
*Jinkai Li, Tangshan Research Institute, China*  
*Nicola Donato, University of Messina, Italy*  
*Giovanni Crupi, University of Messina, Italy*  
*Bart Nauwelaers, Div. ESAT-WAVECORE, KU Leuven, Belgium*  
*Dominique Schreurs, Div. ESAT-WAVECORE, KU Leuven, Belgium*
- 484 **The i-waveNet project and the integrated sea wave measurements in the Mediterranean sea**  
*Salvatore Aronica, National Research Council (IAS-CNR), Italy*  
*Andrea Cannata, University of Catania, Italy*  
*Flavio Cannavò, INGV, Italy*  
*Fulvio Capodici, University of Palermo, Italy*  
*Giuseppe Ciraolo, University of Palermo, Italy*  
*Sebastiano D'Amico, University of Malta, Malta*  
*Adam Gauci, University of Malta, Malta*  
*Carlo Lo Re, Italian National Institute for Environmental Protection and Research, Italy*  
*Giorgio Manno, University of Palermo, Italy*  
*Gabriele Nardone, Italian National Institute for Environmental Protection and Research, Italy*  
*Arianna Orasi, Italian National Institute for Environmental Protection and Research, Italy*
- 488 **Use of a low-cost unmanned surface vessel for bathymetric surveys and pocket beach sediment dynamics monitoring**  
*Hiba Wazaz, University of Malta, Malta*  
*Alan Deidun, University of Malta, Malta*  
*Adam Gauci, University of Malta, Malta*
- 493 **Implementation of the log-transformed band ratio algorithm on images of WorldView-3 and Sentinel-2 for bathymetry mapping of a pocket beach of Malta**  
*Antoine Cornu, University of Malta, Malta*  
*Sebastiano D'Amico, University of Malta, Malta*  
*Emanuele Colica, University of Malta, Malta*  
*Luciano Galone, University of Malta, Malta*  
*Adam Gauci, University of Malta, Malta*  
*Arnaud Le-Bris, LASTIG, Univ Gustave Eiffel, France*  
*Manchun Lei, LASTIG, Univ Gustave Eiffel, France*



**497 Investigating Pocket beach dynamics in Malta: The SIPOBED project**

*Sebastiano D'Amico, University of Malta, Italy*  
*Luciano Galone, University of Malta, Italy*  
*Emanuele Colica, University of Malta, Italy*  
*Adam Gauci, University of Malta, Italy*  
*Gianluca Valentino, University of Malta, Italy*  
*Luca Piroddi, University of Malta, Italy*  
*Peter Iregbeyen, University of Malta, Italy*

**501 Validation of high resolution SAR winds fields obtained by Deep Learning**

*Stefano Zecchetto, Consiglio Nazionale delle Ricerche, Italy*  
*Andrea Zanchetta, Hong Kong Baptist University, China*

**506 An improved acoustic station for deep-sea long-term measurements**

*Sergio Sciré Scappuzzo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Fabrizio Ameli, Istituto Nazionale di Fisica Nucleare, Italy*  
*Simone Biagi, Istituto Nazionale di Fisica Nucleare, Italy*  
*Cinzia Caruso, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Giacomo Cuttone, Istituto Nazionale di Fisica Nucleare, Italy*  
*Roberto D'Aleo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Fabiano Felice, Istituto Nazionale di Fisica Nucleare, Italy*  
*Emidio Giorgio, Istituto Nazionale di Fisica Nucleare, Italy*  
*Francesco Italiano, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Gianluca Lazzaro, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Pietro Litrico, Istituto Nazionale di Fisica Nucleare, Italy*  
*Manfredi Longo, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Marco Meschis, Istituto Nazionale di Geofisica e Vulcanologia, Italy*  
*Maurizio Mongelli, Istituto Nazionale di Fisica Nucleare, Italy*  
*Carlo Nicolau, Istituto Nazionale di Fisica Nucleare, Italy*  
*Angelo Orlando, Istituto Nazionale di Fisica Nucleare, Italy*  
*Santi Passarello, Istituto Nazionale di Fisica Nucleare, Italy*  
*Sara Pulvirenti, Istituto Nazionale di Fisica Nucleare, Italy*  
*Davide Sciuto, Istituto Nazionale di Fisica Nucleare, Italy*  
*Irene Sgura, Istituto Nazionale di Fisica Nucleare, Italy*  
*Domenico Traina, Istituto Nazionale di Geofisica e Vulcanologia, Italy*

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**Session 6.2 - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - Part 2**

**Room: Benedictine Monastery - ROOM 1**

**Chairs:** *Vittorio Bianco, National Research Council, Italy*  
*Pietro Ferraro, National Research Council, Italy*

**511 Synthetic microfibers discriminated by AI-enabled polarization resolved Digital Holography**

*Marika Valentino, National Research Council, Italy*  
*Jaromír Béhal, National Research Council, Italy*  
*Vittorio Bianco, National Research Council, Italy*  
*Simona Itri, National Research Council, Italy*  
*Raffaella Mossotti, National Research Council, Italy*  
*Giulia Dalla Fontana, National Research Council, Italy*  
*Ettore Stella, National Research Council, Italy*  
*Lisa Miccio, National Research Council, Italy*  
*Pietro Ferraro, National Research Council, Italy*

**516 A study on motility of the green microalgae *Tetraselmis* tracked by digital holography**

*Elena Cavalletti, Stazione Zoologica Anton Dohrn, Italy*  
*Daniele Sirico, National Research Council, Italy*  
*Lisa Miccio, National Research Council, Italy*  
*Vittorio Bianco, National Research Council, Italy*  
*Pasquale Memmolo, National Research Council, Italy*  
*Angela Sardo, Stazione Zoologica Anton Dohrn, Italy*  
*Sergio Balzano, Stazione Zoologica Anton Dohrn, Italy*  
*Pietro Ferraro, National Research Council, Italy*

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**Session 7.1 - Studying the Life History Traits in Marine Fish: Methods and Tools**

**Room: Castle of Milazzo - Old Dome**

**Chair: Mauro Sinopoli, SZN - Anton Dohrn, Italy**

**521 The use of Mean Life Span index as indicator of ecological status in trawled areas: preliminary observations**

*Mauro Sinopoli, SZN- Anton Dohrn, Italy*  
*Fabio Badalamenti, IAS - CNR, Italy*  
*Giovanni D'Anna, IAS - CNR, Italy*  
*Fabio Fiorentino, IRBIM-CNR, Italy*  
*Carlo Pipitone, IAS - CNR, Italy*  
*Germana Garofalo, IRBIM-CNR, Italy*

**526 Age and growth of *Helicolenus dactylopterus* in the north-western Ionian Sea: comparison between direct and indirect methods**

*Letizia Sion, CoNISMa, Università degli Studi di Bari, Italy*  
*Laura Cornacchia, CoNISMa, Università degli Studi di Bari, Italy*  
*Gabriele Galasso, CoNISMa, Università degli Studi di Bari, Italy*  
*Francesca Capezuto, CoNISMa, Università degli Studi di Bari, Italy*  
*Angela Carluccio, Università degli Studi di Bari, Italy*  
*Porzia Maiorano, CoNISMa, Università degli Studi di Bari, Italy*  
*Gianfranco D'Onghia, CoNISMa, Università degli Studi di Bari, Italy*

**530 Feeding behaviour of deep-water scavengers in the central Mediterranean: in situ observations using a baited lander**

*Angela Carluccio, Università degli Studi di Bari, Italy*  
*Francesca Capezuto, CoNISMa, Università degli Studi di Bari, Italy*  
*Porzia Maiorano, CoNISMa, Università degli Studi di Bari, Italy*  
*Letizia Sion, CoNISMa, Università degli Studi di Bari, Italy*  
*Gianfranco D'Onghia, CoNISMa, Università degli Studi di Bari, Italy*

**535 Stomach content analysis explains the functioning of the marine food web and gives a contribution to biodiversity knowledge**

*Francesca Capezuto, CoNISMa, Università degli Studi di Bari, Italy*  
*Angela Carluccio, Università degli Studi di Bari, Italy*  
*Gabriele Galasso, CoNISMa, Università degli Studi di Bari, Italy*  
*Porzia Maiorano, CoNISMa, Università degli Studi di Bari, Italy*  
*Letizia Sion, CoNISMa, Università degli Studi di Bari, Italy*  
*Cristina Turco, CoNISMa, Università degli Studi di Bari, Italy*  
*Gianfranco D'Onghia, CoNISMa, Università degli Studi di Bari, Italy*

**540 The role of FADs (Fish Aggregating Devices) in the coastal dispersion of juvenile fish species in the North-Western Sicily**

*Mauro Sinopoli, SZN- Anton Dohrn, Italy*  
*Fabio Badalamenti, IAS-CNR, Italy*  
*Giovanni D'Anna, IAS-CNR, Italy*

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**Session 7.2 - Innovative Approaches for the Conservation Assessment of Syngnathids and other Sensitive Fish in a Changing World**

**Room: Benedictine Monastery - ROOM 1**



**Chair:** Cataldo Pierri, *University of Bari, Italy*

**545 Behavioral traits of captive short-snouted seahorse *Hippocampus hippocampus*, Linnaeus 1758**

*Michele Gristina, IAS-CNR, Italy*

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

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

*Jorge Palma, University of Algarve, Portugal*

**549 Assessment of *Hippocampus guttulatus* diet using DNA metabarcoding of faeces**

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

*Bruno Fosso, National Council of Research, Italy*

*Giuseppe Corriero, University of Bari Aldo Moro, Italy*

*Bachir Balech, National Council of Research, Italy*

*Marinella Marzano, National Council of Research, Italy*

*Graziano Pesole, National Council of Research, University of Bari, Italy*

*Monica Santamaria, National Council of Research, Italy*

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

*Michele Gristina, National Council of Research, Italy*

**554 Assessing seahorses' distribution along the Italian coasts through citizen science and social media platforms**

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

*Alessandro Nota, University of Pavia, Italy*

*Valentina Amoruso, University of Bari Aldo Moro, Italy*

*Francesco Tiralongo, Scientific Organization for Research and Conservation of Marine Biodiversity, University of Catania, Italy*

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

*Michele Gristina, National Council of Research, Italy*

**559 Long-snouted seahorse, *Hippocampus guttulatus*, under global warming**

*Ana B. Costa, ISPA, Instituto Universitário, Portugal*

*Miguel Correia, ISPA, Instituto Universitário, Portugal*

*Gonçalo Silva, ISPA, Instituto Universitário, Portugal*

*Ana M. Faria, ISPA, Instituto Universitário, Portugal*

**563 Analysis on distribution of syngnathid species in confined Mediterranean areas: a literature review**

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

*Giuseppe Corriero, University of Bari Aldo Moro, Italy*

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

*Marika Montanari, University of Bari Aldo Moro, Italy*

*Michele Gristina, National Council of Research, Italy*

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***Session 7.3 - Emerging Contaminants to Marine Environment: Sources, Types and Measurement of Effects - Part 2***

**Room: Benedictine Monastery - ROOM 2**

**Chairs:** Ermelinda Prato, *Water Research Institute - National Research Council*

*Francesca Biandolino, Water Research Institute - National Research Council*

**568 Interactive effects of temperature and carbamazepine across two-generational study on the development of the copepod *Tigriopus fulvus***

*Isabella Parlapiano, IRSA - CNR, Italy*

*Francesca Biandolino, IRSA - CNR, Italy*

*Giuseppe Denti, IRSA - CNR, Italy*

*Donatella Coviello, University of Basilicata, Italy*

*Asia Grattagliano, University of Rome Tor Vergata, Italy*

*Ermelinda Prato, IRSA - CNR, Italy*

**572 Effect of glyphosate on growth and fatty acids profile of the amphipod *Gammarus aequicauda***

*Francesca Biandolino, IRSA - CNR, Italy*

*Isabella Parlapiano, IRSA - CNR, Italy*

*Asia Grattagliano, University of Rome Tor Vergata, Italy*

*Ermelinda Prato, IRSA - CNR, Italy*

- 576 **Genotoxicity set up in nauplii and adults of *Artemia franciscana* exposed to phenanthrene, naphthalene, fluoranthene and benzo(k)fluoranthene**  
*Luisa Albarano, University of Naples Federico II, Italy*  
*Sara Serafini, University of Naples Federico II, Italy*  
*Marco Guida, University of Naples Federico II, Italy*  
*Giovanni Libralato, University of Naples Federico II, Italy*
- 581 **Effects of Aluminum in the striped venus clam, *Chamelea gallina***  
*Marco Vito Guglielmi, University of Bari Aldo Moro, Italy*  
*Daniela Semeraro, University of Bari Aldo Moro, Italy*  
*Donatella Mentino, University of Bari Aldo Moro, Italy*  
*Eliana Patricelli, University of Bari Aldo Moro, Italy*  
*Francesco Mastrototaro, University of Bari Aldo Moro, Italy*  
*Roberto Carlucci, University of Bari Aldo Moro, Italy*  
*Maria Mastrodonato, University of Bari Aldo Moro, Italy*  
*Giovanni Scillitani, University of Bari Aldo Moro, Italy*
- 587 **Numerical investigation of microplastic dispersion in the water column**  
*Agnese Pini, University of Rome "La Sapienza", Italy*  
*Simone Zazzini, University of Rome "La Sapienza", Italy*  
*Paolo Bello, University of Rome "La Sapienza", Italy*  
*Paolo Monti, University of Rome "La Sapienza", Italy*  
*Giovanni Leuzzi, University of Rome "La Sapienza", Italy*