

2021 IEEE INTERNATIONAL WORKSHOP ON Metrology for the Sea



4-6 OCTOBER 2021



Virtual Conference

WORKSHOP PROGRAM

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www.metrosea.org



Università degli Studi
Mediterranea
di Reggio Calabria

IEEE MetroSea 2021 Welcome Message

On behalf of the Organizing Committee, we cordially welcome you to the **2021 IEEE International Workshop on Metrology for the Sea** (*MetroSea 2021*).

The Sea is the medium that allowed people to travel from one continent to another using vessels and even today despite the use of aircraft. It has been acting also as a great reservoir and source of foods for all living beings. However, for many generations it served as a landfill for depositing conventional and nuclear wastes, especially in its seabed and there is a race to exploit minerals and resources, different from foods, encompassed in it. Its health is a very challenge for the survival of all humanity since it is one the most important environmental components targeted by the global warming.

"Learning to measure sea health parameters" is a challenge for the whole humanity. This is underlined by the growing interest for the marine sciences. In this field new technologies and analysis techniques have recently improved the combined use of numerical approach and metrology systems to get more detailed marine data. For example, advances in computer science, data acquisition and modelling, new spectrometric techniques, analysis and remote sensing have encouraged interactions among these scientific disciplines based on measurement data and marine data interpretations.

The benefits of a multidisciplinary approach have reduced the level of uncertainty in marine technical studies. The 2021 IEEE International Workshop on Metrology for the Sea aims to gather people who work in developing instrumentation and measurement methods for the sea. Attention is paid, but not limited to, at new technology for sea environment monitoring, metrology-assisted production in sea industry, ship component measurement, sensors and associated signal conditioning for the sea, and calibration methods for electronic test and measurement for marine applications.

This edition of MetroSea was originally planned to be held in Reggio Calabria (Italy) hosted by the University "Mediterranea" of Reggio Calabria; however, due to the COVID-19 emergency, we were forced to organize this 5th edition as a virtual conference. We do hope that, soon, there will be another chance to host you all in Reggio Calabria. The virtual Workshop has been planned in order to make an online conference not so different from a live event. It was challenging to set up a web platform to maintain live the presentations and we thank the colleagues of the organizing team, who professionally addressed this issue.

Despite the COVID-19 occurrence, we received 135 extended abstracts from all over the world. Due to the time limits of the workshop, only 98 papers have been selected after a meticulous activity of the program committee and additional reviewers. We like to thank all people who contributed to this process with opinions, comments, and suggestions to choose the best papers and improve their quality.

Authors of all the above contributions are also welcome to submit an extended version to the Special Issues on, MDPI Biology, MDPI Sensors and MDPI Journal of Marine Science and Engineering.

The Workshop Technical Program consists of 21 oral sessions scheduled over three days. The technical program encompasses several events and activities. With the wide range of technical sessions covering the many fields of metrology for the sea we are happy to welcome you to the variety of technical presentations that await you this year.

The keynote speeches will be held by experts in the field of metrology for the sea. Aydogan Ozcan, Electrical and Computer Engineering Department, Bioengineering Department, California NanoSystems Institute UCLA, University of California, Los Angeles, CA, USA will speak about *"Deep Learning-enabled Computational Water Sensors"*. Luigi Sinapi, International Hydrographic Organization (IHO) will present *"The International Hydrographic Organization: One Hundred Years of International Cooperation in Hydrography"*. Rebecca Cowley, Senior Experimental Scientist with CSIRO Oceans, Australia will discuss on *"Identifying, retaining and sharing of uncertainties in historic oceanographic records"*. We are honored to have them as plenary speakers and thank them in advance for coming to our conference to share their knowledge and experiences with us.

This edition of the Workshop includes:

- **"Military Metrology for the Sea"**, organized by Italian Navy and AFCEA Naples Chapter, October 4, 09:30 CET.
- A **Tutorial** on *"Emerging threats for the marine environment: Marine litter. Methods to monitor its presence and potential impacts on the marine megafauna"*, Morgana Vighi, University of Barcelona, Spain.
- **Round Table** - *Education on Metrology for the Sea*, Moderator: Giovanni Battista Rossi, University of Genoa, Italy.
- **WIE Panel**, *"Sharing idea with experienced and early-stage researchers"*.

Five Awards offered by International Institution and Companies will be assigned, in particular to young researchers.

With the aim of providing a common ground for researches to share their findings on the metrology for the sea, the Workshop was improved by adding a significant number of Special Sessions. This allows a spontaneous aggregation providing a forum of discussion close to the single research field. We wish to thank the organizers of these Special Sessions for their cooperation and support to the Workshop organization.

The 2021 IEEE International Workshop on Metrology for the Sea is about to begin.

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IEEE MetroSea 2021 Plenary Speakers

Plenary Tuesday, October 5, 2021 - H 09:30 CEST

Deep Learning-enabled Computational Water Sensors

Aydogan Ozcan

University of California, CA

ABSTRACT

Deep learning is a class of machine learning techniques that uses multi-layered artificial neural networks for automated analysis of signals or data. Beyond its main stream applications such as the recognition and labeling of specific features in images, deep learning holds numerous opportunities for revolutionizing computational microscopy, sensor development and instrumentation. In this presentation, I will provide an overview of some of our recent work on the use of deep neural networks in advancing computational water sensor systems for rapid, automated and high-throughput analysis of water contamination using field-portable and cost-effective instruments.

SPEAKER BIO

Dr. Aydogan Ozcan is the Chancellor's Professor and the Volgenau Chair for Engineering Innovation at UCLA and an HHMI Professor with the Howard Hughes Medical Institute, leading the Bio- and Nano-Photonics Laboratory at UCLA School of Engineering and is also the Associate Director of the California NanoSystems Institute. Dr. Ozcan is elected Fellow of the National Academy of Inventors (NAI) and holds >45 issued/granted patents and >20 pending patent applications and is also the author of one book and the co-author of >700 peerreviewed publications in major scientific journals and conferences. Dr. Ozcan is the founder and a member of the Board of Directors of Lucendi Inc., Hana Diagnostics, Pictor Labs, as well as Holomic/Cellmic LLC, which was named a Technology Pioneer by The World Economic Forum in 2015. Dr. Ozcan is also a Fellow of the American Association for the Advancement of Science (AAAS), the International Photonics Society (SPIE), the Optical Society of America (OSA), the American Institute for Medical and Biological Engineering (AIMBE), the Institute of Electrical and Electronics Engineers (IEEE), the Royal Society of Chemistry (RSC), the American Physical Society (APS) and the Guggenheim Foundation, and has received major awards including the Presidential Early Career Award for Scientists and Engineers, International Commission for Optics Prize, Biophotonics Technology Innovator Award, Rahmi M. Koc Science Medal, International Photonics Society Early Career Achievement Award, Army Young Investigator Award, NSF CAREER Award, NIH Director's New Innovator Award, Navy Young Investigator Award, IEEE Photonics Society Young Investigator Award and Distinguished Lecturer Award, National Geographic Emerging Explorer Award, National Academy of Engineering The Grainger Foundation Frontiers of Engineering Award and MIT's TR35 Award for his seminal contributions to computational imaging, sensing and diagnostics. Dr. Ozcan is also listed as a Highly Cited Researcher by Web of Science, Clarivate.



Plenary Tuesday, October 5, 2021 - H 14:20 CEST

The International Hydrographic Organization: One Hundred Years of International Cooperation in Hydrography

Luigi Sinapi

International Hydrographic Organization (IHO)

ABSTRACT

The International Hydrographic Organization is an intergovernmental organization that works to ensure all the world's seas, oceans and navigable waters are surveyed and charted. Established in 1921, it coordinates the activities of national hydrographic offices and promotes uniformity in nautical charts and documents. It issues survey best practices, provides guidelines to maximize the use of hydrographic survey data and develops hydrographic capabilities in Member States.

Hydrography is the basis for all activities involving the sea such as Safety of navigation, Tourism, Protection and management of the marine environment, Coastal zone management, Marine science, Fishing, aquaculture and mariculture, Use of marine resources: minerals, oil & gas, renewable energy and many others.

Nowadays, hydrography is more and more related to reconciling the use and the preservation of the marine environment, through the involvement in global initiative to contribute to the oceans' knowledge and their sustainable exploration and exploitation.

Traditionally hydrographic data was used mostly for the safety of navigation, but it can actually be used by a wide variety of stakeholders and is an example of how relevant hydrography is in discussions on the protection of the oceans: to monitor changes and effectively protect.

Over the past 100 years, the IHO has provided its support in knowledge, technology and new standards to the Hydrographic Offices and the Maritime Community, enlarging the membership and increasing the cooperation amongst its member States and the hydrographic Regions.

SPEAKER BIO

Rear Admiral Luigi Sinapi was born in Grosseto (Italy) on August 27 1967. He joined the Naval Academy in Livorno (Italy) in 1985.

Rear Admiral Sinapi was:

- Commanding Officer of the MIRTO Survey Vessel
- Naval Staff Officer at the NATO Navy Command in Naples (Italy)
- Commanding Officer of Frigate ZEFFIRO
- Commanding Officer of Destroyer DURAND DE LA PENNE



- Head of the Financial Planning, the Operations and Logistics departments of the Italian Navy General Staff
- Director of the Italian Hydrographic Institute from October 2015 to July 2020.

From 1st September 2020, Rear Admiral Sinapi has been elected IHO Director for six years.

Among the many medals and decorations he was awarded in the course of his career, RAdm Sinapi received the Commemorative Medal for the 11th Italian Expedition to Antarctica, NATO Medals for the former state of Yugoslavia and Kosovo operations, and the Order of Merit of the Italian Republic (Knight).

RAdm Sinapi earned the following:

- II level degree in Physics at the University of Lecce (Italy)
- I level degree in Navigation and Maritime Science at the University of Pisa (Italy)
- II level degree in International Diplomacy at the University of Trieste (Italy)
- II level master in Marine Geomatics at the University of Genoa (Italy) - IHO-FIG-ICA, Category A Hydrography
- Master in International Strategic and Military studies at the CASD, Centre for the Defense Higher Studies, Rome (Italy).

RAdm Sinapi taught hydrography and geodesy at the Parthenope University, Naples (Italy), and has published a number of essays in national and international journals and reviews.

He has been member of a number of technical and scientific national and international committees in the fields of navigation, hydrography, cartography, marine geophysics and oceanography.

He chaired the IHO MBSHC, Mediterranean and Black Sea Hydrographic Commission from 2017 to 2019, and the IHO HSSC, Hydrographic Services and Standards Committee, from 2017 to 2020.

RAdm Sinapi is married to Dr. Loredana Lupoli and has two sons, Giovanni and Angelo. His hobbies are navigation, sailing, basketball and tennis.

Plenary Wednesday, October 6, 2021 - H 09:00 CEST

Identifying, retaining and sharing of uncertainties in historic oceanographic records

Rebecca Cowley

Senior Experimental Scientist with CSIRO Oceans

ABSTRACT

Ocean observations are crucial for a host of climate and variability research and prediction activities, such as climate monitoring and daily-to-seasonal-to-decadal ocean and weather forecasting. To make best use of these data, it is essential to understand the uncertainty attached to each of the observations including accounting for changes in instrument and observing practices over time.

Up till now, oceanographic databases have not contained measurement uncertainty information, as these data were either not recorded or have been lost.

The International Quality-controlled Ocean Database (IQuOD) project, based on the well-known World Ocean Database (WOD) and, beginning with the temperature records, has several goals to aimed at providing value-added information to the WOD. These include application of standardised quality control methods to provide scientific quality control flags, correction of known biases and addition of uncertainty estimates to each data point. The first version of these improvements to the WOD are now public.

Estimating uncertainty for millions of ocean temperature observations can only be achieved by the time-consuming effort of research into institutional archives and literature. Moving forward, it is important to encourage the recording and inclusion of uncertainties and key metadata with oceanographic measurement data.

SPEAKER BIO

Rebecca Cowley is a Senior Experimental Scientist with CSIRO Oceans and Atmosphere, Australia, and has been with CSIRO since 1997. Rebecca has a double degree in Chemistry and Aquatic Biology from Deakin University, Australia. Her first role at CSIRO was as a laboratory chemist, she has since developed many skills with various ocean instrumentation and data quality control and analysis.

Rebecca has extensive experience with collection, quality control and analysis of ocean observation data, including spending many weeks at sea on research vessels.



Rebecca leads the Ship of Opportunity program at CSIRO and is currently the Chair of the international Ship Of Opportunity Program Implementation Panel (SOOPIP) program. She is a member of the steering team for the International Quality-controlled Ocean Database (IQuOD) project.

Rebecca is married with three children and lives in Tasmania, Australia. She enjoys bushwalking, swimming and training her border collie to do amazing tricks.

IEEE MetroSea 2021 Tutorial

Monday, October 4, 2021 - H 14:20 CEST

Emerging threats for the marine environment: Marine litter. Methods to monitor its presence and potential impacts on the marine megafauna

Morgana Vighi

University of Barcelona, Spain

ABSTRACT

The marine environment has been exposed for centuries to the impacts derived by human presence. Since decades the marine fauna has been facing the consequences of the indiscriminate exploitation of marine resources and the increase of urbanization and industrialization along the coastlines. While lot of concern was raised in the past by chemical pollution, the pollution of the sea caused by solid waste, and particularly by plastics, is a relatively novel issue. A growing production of scientific literature in the recent years has brought the focus on the several impacts caused by marine litter to marine fauna, especially birds, mammals and sea turtles, which can be severely damaged by entanglement or ingestion of macro litter. Moreover, the presence of smaller litter items (i.e., micro litter) has been reported almost in any compartment of our environment, causing major preoccupation on the potential effects of these particles and the chemicals derived by their degradation on living organisms. A number of environmental directives have been produced at European level to face the issue of plastics at sea, and a series of scientific projects have been financed and are still ongoing to develop protocols to consistently monitor marine litter pollution and assess the extent of this threat to the marine biodiversity. Here we will provide an overview of the main methodologies and results produced by these projects.

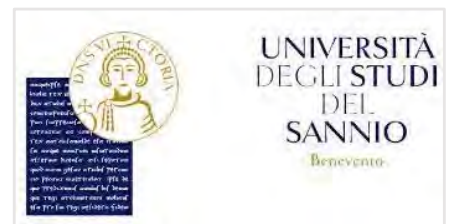
SHORT BIOGRAPHY

Morgana Vighi holds a PhD in Biodiversity from the University of Barcelona, a MSc in Marine Biology from the University of Pisa and a Speciality Master in Management and conservation of the marine and coastal environment from the University of Siena. Her research interests focus on the biology and ecology of marine mammals and the conservation of the marine environment. Over the past decade she has been involved in several projects in Europe and the United States focussing on the biology, ecology and conservation of marine mammals and their environment. Since 2008 she has been collaborating with the Tethys Research Institute and for the past ten years she has been one of the Principal Investigators of the Cetaceans Sanctuary Research (CSR) project in the



Ligurian Sea. More recently, she has been involved as a postdoctoral researcher in a project led by the British Antarctic Survey focussing on the recovery of the Southern right whale after its whaling exploitation and in the Interreg-EU MEDSEALITTER project, aimed to the protection of marine biodiversity from the impact of marine litter. Such experience allowed her to get in touch with a growing network of researchers and stakeholders, get familiar with new technologies for marine monitoring, and increase her overall awareness of the most current issues of marine conservation. She is currently providing freelance environmental consultancy for the EU Joint Research Centre and other European agencies, and she is a council member of both the European Cetacean Society (ECS) and the Spanish Cetacean Society (SEC). She has (co)-authored several scientific publications and reports, including congress proceedings, national and international ISI journals, and she acts as a reviewer for a number of international ISI journals.

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Program Schedule - October 4, 2021

MONDAY - OCTOBER 4, 2021	
09:30 - 12:00	Military Metrology for the Sea
14:00 - 14.50	Tutorial Emerging threats for the marine environment: Marine litter. Methods to monitor its presence and potential impacts on the marine megafauna <i>Morgana Vighi, University of Barcelona, Spain</i>
14:50 - 15:00	BREAK
15:00 - 16:20	Round Table - Education on Metrology for the Sea

Program Schedule - October 5, 2021

TUESDAY - OCTOBER 5, 2021			
09:00 - 09:30	OPENING CEREMONY		
09:30 - 10:20	Plenary Talk - Deep Learning-enabled Computational Water Sensors Aydogan Ozcan, <i>University of California, CA</i>		
10:20 - 10:30	BREAK		
10:30 - 12:10	Technical Session #1.1 Special Session - Measurement and Evaluation Metodologies for Environment - PART 1	Technical Session #1.2 Special Session - Organic Chemistry and Marine Ecosystems: from Pollution to Nanotechnology	Technical Session #1.3 Special Session - Current Challenges and new Technological Approaches Applied to Marine Mammals and Sea Turtles Conservation - PART 1
12:10 - 12:20	BREAK		
12:20 - 13:40	Technical Session #2.1 Special Session - Measurement and Evaluation Metodologies for Environment - PART 2	Technical Session #2.2 Special Session - Benthic Metrosea: Measuring Living Organisms for the Exploration and the Monitoring of Marine Habitats - PART 1	Technical Session #2.3 Special Session - Current Challenges and new Technological Approaches Applied to Marine Mammals and Sea Turtles Conservation - PART 2
13:40 - 14:20	BREAK		
14:20 - 15:10	Plenary Talk - The International Hydrographic Organization: One Hundred Years of International Cooperation in Hydrography Luigi Sinapi, <i>International Hydrographic Organization (IHO)</i>		
15:10 - 15:20	BREAK		
15:20 - 17:20	Technical Session #3.1 Special Session - Building a Metrology Framework for Ocean Observation	Technical Session #3.2 Special Session - Current Challenges and new Technological Approaches Applied to Marine Mammals and Sea Turtles Conservation - PART 3	15:20 - 17:25 - Technical Session #3.3 Special Session - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 1
17:20 - 17:30	BREAK		
17:30 - 18:50	Technical Session #4.1 General Session - PART 1	Technical Session #4.2 Special Session - Benthic Metrosea: Measuring Living Organisms for the Exploration and the Monitoring of Marine Habitats - PART 2	17:30 - 18:55 - Technical Session #4.3 Special Session - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 2

Program Schedule - October 6, 2021

WEDNESDAY - OCTOBER 6, 2021			
09:00 - 09:50	Plenary Talk - Identifying, retaining and sharing of uncertainties in historic oceanographic records <i>Rebecca Cowley, Senior Experimental Scientist with CSIRO Oceans</i>		
09:50 - 10:00	BREAK		
10:00 - 11:40	Technical Session #5.1 Special Session - Recent Methodological and Technical Approaches Applied to Conservation of Marine Osteichthyes in a Changing World: Seahorses, Pipefishes and Pelagic Fishes	Technical Session #5.2 Special Session - Marine Organism Tagging	10:00 - 12:00 - Technical Session #5.3 Special Session - Biotic and Abiotic Interactions as a Proxy for Measuring Change at Sea
11:40 - 11:50	BREAK		
11:50 - 13:30	Technical Session #6.1 Special Session - Advances on Geomatic Measurements for the Safety of Ship and Navigation	Technical Session #6.2 Special Session - Technical Applications, Current Challenges and Future Perspectives for the Mitigation of Fishery and Aquaculture Impacts on Marine Ecosystems	Technical Session #6.3 General Session - PART 2
13:30 - 14:30	BREAK		
14:30 - 16:00	Plenary Session - WIE Panel <i>Sharing idea with experienced and early-stage researchers</i>		
16:00 - 17:20	Technical Session #7.1 General Session - PART 3	Technical Session #7.2 General Session - PART 4	Technical Session #7.3 Special Session - Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 3
17:30 - 18:00	CLOSING AND AWARD CEREMONY		

Technical Sessions - Monday, October 4

09:30 - 12:10 CEST

MILITARY METROLOGY FOR THE SEA

Military Metrology for the Sea is a parallel event of 2021 IEEE International Workshop on Metrology for the Sea.

The event is organized by **Italian Navy - Marina Militare** and **AFCEA Naples Chapter**.

PROGRAM

09:30 - 09:45 **Welcome from the Organizing Committee**

09:45 - 10:00 **Welcome Addresses**

B.Gen.(r) Dario Nicolella, *President of AFCEA Chapter Naples*

10:00 - 10:30 **BOOMER project for Naval multi-influence signature measurements:
the key role of Unmanned Vehicles to reduce Mine risk**

Lt. Daniele Sebino Terracciano, Lt. Lorenzo Bazzarello, *Naval Support and Trial Center – La Spezia*

10:30 - 11:00 **Air Urban Mobility to support Maritime environment, the Skygate Project**

B.Gen. (r) Giovanni Savoldelli Pedrocchi

11:00 - 11:30 **Use of an advanced amphibious rover as a multipurpose
georeferenced sensor's carrier**

Eduardo De Francesco – *Setel Group*

11:30 - 12:00 **The Convergence of Cyber, Electronic and Kinetic Warfare through
Naval Sensors and Systems**

Prof. Alan Oliveira, *University of Lisbon*

12:00 - 12:10 **Closing remarks**

B.Gen.(r) Dario Nicolella, Prof. Eng. Pasquale Daponte

14:00 - 14:50 CEST

TUTORIAL SESSION

Room: Virtual Room #1

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

Emerging threats for the marine environment: Marine litter. Methods to monitor its presence and potential impacts on the marine megafauna

Morgana Vighi, *University of Barcelona, Spain*

15:00 - 16:30 CEST

ROUND TABLE - EDUCATION ON METROLOGY FOR THE SEA

Room: Virtual Room #1

Moderator: Giovanni Battista Rossi, *University of Genoa, Italy*

Yuri Cotroneo

From the reversing thermometer to the unmanned marine vehicles, the teaching experience at University Parthenope

Nicola Pizzeghello

Hydrospatial measurement of the sea: education of the hydrographic surveyor viewed by the Italian Hydrographic Institute

Marc Le Menn

Teaching metrology to students oceanographers

Nicolas Kolodziejczyk

Teaching in situ measurements at Master level at University of Brest

Fabio Filianoti

Measurements on energy conversion systems at sea

Michele Viviani

UNIGE Sea Study Centre: interdisciplinary cooperation and specific cases

César Mösso Aranda

Education to cope with the challenges of a changing world

Giovanni Rossi

Education in measurement for the sea: some general issues

Technical Sessions - Tuesday, October 5

09:00 - 09:30

OPENING SESSION – WELCOME ADDRESSES

Room: Virtual Room #1

09:30 - 10:20 CEST

PLENARY SESSION

Room: Virtual Room #1

Chair: Pietro Ferraro, *CNR, Italy*

Deep Learning-enabled Computational Water Sensors

Aydogan Ozcan, *University of California, CA*

10:30 - 12:10 CEST

SESSION 1.1

Measurement and Evaluation Methodologies for Environment - PART 1

Room: Virtual Room #1

Chairs: Massimo Squillante, *University of Sannio, Italy*

Roberto Jannelli, *University of Sannio, Italy*

David Carfi, *University of Messina, Italy*

10:30 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*

10:50 'Risk Governance' Model supporting the effectiveness of Environmental Research Infrastructures

Roberto Jannelli, University of Sannio, Italy
Massimo Squillante, University of Sannio, Italy
Maria Incoronata Fredella, EMSO ERIC

11:10 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

11:30 Cumulative Correspondence Analysis applied to biological oceanographic data

Biagio Simonetti, University of Sannio, Italy
Raffaella Ciuffreda, University of Sannio, Italy

11:50 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

10:30 - 12:10 CEST

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*

10:30 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

10:50 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 Galiotta, 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

11:10 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

11:30 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

11:50 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

10:30 - 12:10 CEST

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*

10:30 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

10:50 Contour extraction algorithm for the automated photo-identification of dolphins

Rosalia Maglietta, CNR-STIIMA, Italy

Emanuele Seller, University of Bari, Italy

Roberto Carlucci, University of Bari, Italy

Carmelo Fanizza, Jonian Dolphin Conservation, Italy

Vito Renò, CNR-STIIMA, Italy

Giovanni Dimauro, University of Bari, Italy

Ettore Stella, CNR-STIIMA, Italy

11:10 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

11:30 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

11:50 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

12:20 - 13:20 CEST

SESSION 2.1

Measurement and Evaluation Metodologies 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*

12:20 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

12:40 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

13:00 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

12:20 - 13:40 CEST

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*

12:20 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

12:40 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

13:00 A sea of fireworms? Interannual variability of abundance of *Hermodice carunculata* (Annelida, Amphinomidae) in the Salento peninsula (Ionian Sea, SE Italy)

Andrea Toso, University of Salento, Italy

Stefano Piraino, University of Salento, Italy

Sergio Fai, Municipality of Nardò, Italy

Adriana Giangrande, University of Salento, Italy

13:20 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 Universites, France

Rita Cannas, University of Cagliari, Italy

Maria Cristina Follesa, University of Cagliari, Italy

12:20 - 13:40 CEST

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-STIIMA, Italy*

Aylin Akkaya, *DMAD-Marine Mammals Research Association*

Marta Azzolin, *Gaia Research Institute Onlus*

12:20 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

12:40 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

13:00 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

13:20 Vessel based surveys as a tool to fill critical knowledge gap on *Grampus griseus* in the north eastern Aegean Sea

Guido Pietroluongo, 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

14:20 - 15:10 CEST

PLENARY SESSION

Room: Virtual Room #1

Chair: Pasquale Daponte, *University of Sannio, Italy*

The International Hydrographic Organization: One Hundred Years of International Cooperation in Hydrography

Luigi Sinapi, *International Hydrographic Organization (IHO)*

15:20 - 17:20 CEST

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 Fiscaro, *Laboratoire national de métrologie et d'essais, France*

15:20 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

15:40 The role of National Metrology Institutes in the Ocean Observing System. An example for assessing and quantifying ocean acidification

Daniela Stoica, Laboratoire National de Métrologie et d'Essais (LNE), France
Paola Fiscaro, Laboratoire National de Métrologie et d'Essais (LNE), France
Frank Bastkowski, Physikalisch-Technisch Bundesanstalt, Germany
Steffen Seitz, Physikalisch-Technisch Bundesanstalt, Germany
Florence Salvetat, L'Institut Français de Recherche pour l'Exploitation de la Mer (Ifremer), France

16:00 Metrology for Ocean Sciences: The European Metrology Network for Climate and Ocean Observation

Paola Fisicaro Laboratoire National de Metrologie et d'Essais (LNE), France

16:20 MINKE's Transnational and Virtual Access

Joaquin del Rio Fernandez, Universitat Politècnica de Catalunya, Spain

Manolis Ntoumas, HCMR, Greece

Jaume Piera, ICM-CSIC, Spain

16:40 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

17:00 Implementation of documentary standards in support of international and European climate strategies

Daniela Stoica, Laboratoire National de Métrologie et d'Essais (LNE), France

15:20 - 17:00 CEST

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-STIIMA, Italy*

Aylin Akkaya, *DMAD-Marine Mammals Research Association*

Marta Azzolin, *Gaia Research Institute Onlus*

15:20 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 Yıldırım, DMAD – Marine Mammals Research Association, Turkey

15:40 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 Giacomini, University of Turin, Italy

16:00 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

16:20 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

16:40 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

15:20 - 17:20 CEST

SESSION 3.3

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

Room: Virtual Room #3

Chairs: Onofrio M. Maragò, *Istitute for Chemical-Physical Processes, CNR, Italy*
Vittorio Bianco, *CNR-ISASI, Italy*

15:20 INVITED - Microplastic pollution from textiles: quantitative evaluation and mitigation strategies

Francesca De Falco, University of Plymouth, Plymouth, UK

15:40 INVITED - Applications of digital holographic microscopy towards aquatic particle and plankton monitoring

Ranjoy Barua, Florida Atlantic University, USA

Alexis Base, Florida Atlantic University, USA

Lisa Nyman, Florida Atlantic University, USA

Sean Goughan, Florida Atlantic University, USA

Buyu Guo, University of Minnesota, USA

Malcolm McFarland, Florida Atlantic University, USA

Timothy Moore, Florida Atlantic University, USA

Lysel Garavelli, Pacific Northwest National Laboratory, USA

Jiarong Hong, University of Minnesota, USA

Matt Garrett, Florida Fish and Wildlife Conservation Commission, USA

Aditya R. Nayak, Florida Atlantic University, USA

16:00 INVITED - 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

16:20 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

16:35 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

16:50 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

17:05 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

17:30 - 18:30 CEST

SESSION 4.1

General Session - PART 1

Room: Virtual Room #1

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

17:30 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

17:50 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

18:10 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

17:30 - 18:50 CEST

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*

17:30 Megabenthos Underwater Video (MUV): a new device to evaluate species distribution in hard-toreach 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

17:50 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

18:10 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

18:30 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

17:30 - 18:55 CEST

SESSION 4.3

Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 2

Room: Virtual Room #3

Chairs: Pietro G. Gucciardi, *Istituto for Chemical-Physical Processes, CNR, Italy*
Vittorio Bianco, *CNR-ISASI, Italy*

17:30 INVITED - 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

17:50 INVITED - Qualitative and quantitative analysis of microplastics through an ultra-compact near-infrared spectrometer

Stefania Federici, University of Brescia, Italy

Claudio Marchesi, University of Brescia, Italy

Monika Rani, University of Brescia, Italy

Laura Eleonora Depero, University of Brescia, Italy

18:10 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

18:25 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

18:40 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

Technical Sessions - Wednesday, October 6

09:00 - 09:50 CEST

PLENARY SESSION

Room: Virtual Room #1

Chair: Marc Le Menn, *Service hydrographique et océanographique de la Marine, France*

Identifying, retaining and sharing of uncertainties in historic oceanographic records

Rebecca Cowley, *Senior Experimental Scientist with CSIRO Oceans*

10:00 - 11:40 CEST

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*

10:00 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*

- 10:20 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
- 10:40 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
- 11:00 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
- 11:20 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

10:00 - 11:40 CEST

SESSION 5.2

Marine Organism Tagging

Room: Virtual Room #2

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

10:00 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*

10:20 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*

10:40 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*

11:00 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

11:20 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

10:00 - 12:00 CEST

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*

10:00 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

10:20 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

10:40 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

11:00 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

11:20 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

11:40 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

11:50 - 13:30 CEST

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*

11:50 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

12:10 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

12:30 EGNOS Performances assessment in maritime navigation

Anna Innac, 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

12:50 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

13:10 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

11:50 - 13:30 CEST

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

11:50 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

12:10 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

12:30 Light at 410 nm controls the growth of skin bacteria from *Chelidonichthys lucerna* (Osteichthyes: Triglidae)

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

12:50 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

13:10 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

11:50 - 13:10 CEST

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

11:50 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

12:10 Modular Pod Wells Turbine Array: a Preliminary Assessment

Enrico Petritoli, Università degli Studi "Roma Tre", Italy

Fabio Leccese, Università degli Studi "Roma Tre", Italy

12:30 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

12:50 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

14:30 - 16:00 CEST

IEEE WIE Italy AG Panel Session

Room: Virtual Room #1

Moderators: Roberta Di Pace and Giulia Cipriano

Sharing ideas with experienced and early-stage researchers

14:30 - 14:40 IEEE WIE Italy AG activities and "WIE.steer2STEM.chart"

Patrizia Lamberti, WIE.steer2STEM.chart Promoting Committee Coordinator

14:40 - 15:05 Marine Biology

14:40 Salvatrice Vizzini, University of Palermo, & CoNISMa

14:50 Early stage researchers:

Geraldina Signa, University of Palermo

Alice Mirasole, Stazione Zoologica Anton Dohrn

15:00 Q&A

15:05 - 15:30 Oceanography

- 15:05 Paola Francesca Rivaro, University of Genoa, Programma Nazionale di Ricerca in Antartide, Italy
- 15:15 Early stage researchers:
Davide Vivado, University of Genoa
Paola de Ruggiero, "Parthenope" University of Naples
- 15:25 Q&A

15:30 - 15:55 Round Table

15:55 - 16:00 Closing remarks

16:00 - 17:20 CEST

SESSION 7.1

General Session – Part 3

Room: Virtual Room #1

Chair: Nicola Donato, *University of Messina, Italy*

16:00 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 Sà, Universidade de Lisboa, Portugal

16:20 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

16:40 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

17:00 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

16:00 - 17:20 CEST

SESSION 7.2

General Session – Part 4

Room: Virtual Room #2

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

16:00 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

16:20 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

16:40 Design of a mobile platform for monitoring the aerial and aquatic environment

Silviu Epure, University of Galați, Romania

Adrian Leopa, University of Galați, Romania

Nicolai Hauk, University of Galați, Romania

Valentin Bardahan, University of Galați, Romania

17:00 Trace elements accumulation could influence parasitic load and hematological parameters in a central mediterranean population of Lesser Spotted Dogfish *Scyliorhinus canicula*

Francesca Romana Reinero, 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

16:00 - 17:05 CEST

SESSION 7.3

Optical Methods and Systems for Water Pollution Detection, Characterization and Monitoring - PART 3

Room: Virtual Room #3

Chair: Angela Sardo, *Stazione Zoologica Anton Dohrn, Italy*

16:00 INVITED - 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

16:20 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 Ambrogi, University of Naples Federico II, Italy

Mariacristina Cocca, National Research Council of Italy

16:35 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

16:50 Identification and Quantification of Microplastic with Fibre Shape

Raffaella Mossotti, CNR-STIIMA, Italy

Giulia Dalla Fontana, CNR-STIIMA, Italy

Anastasia Anceschi, CNR-STIIMA, Italy

Tiziano Battistini, Aquafil S.p.A, Italy

17:30 - 18:00 CEST

CLOSING AND AWARD CEREMONY

Room: Virtual Room #1
