



**THIRD INTERNATIONAL WORKSHOP
ON MARINE TECHNOLOGY**

**NOVEMBER 19th-20th
VILANOVA i LA GELTRÚ (BARCELONA)**

Committee

Steering committee

Juanjo Dañobeitia	UTM - Consejo Superior Investigaciones Científicas, Spain
Antoni Mànuel	Universitat Politècnica de Catalunya, Spain
Enric Trullols	Universitat Politècnica de Catalunya, Spain
Christoph Waldmann	(Marum) Bremen University, Germany
Alfonso Carlosena	Universidad Pública de Navarra, Spain
Jorge Marcos Acevedo	Universidad de Vigo, Spain
António Serra	Universidade Técnica Lisboa, Portugal
Joaquín Tintoré	IMEDEA - Consejo Superior Investigaciones Científicas, Spain
Frances Sardà	ICM - Consejo Superior Investigaciones Científicas, Spain
Andrés Iborra	Universidad Politécnica de Cartagena, Spain
Paolo Favali	Istituto Nazionale di Geofisica e Vulcanologia (INGV), Italy
Rafael García	Universitat de Girona, Spain
Gabriel Oliver	Universitat de les Illes Balears, Spain
Miguel Bruno Mejías	Universidad de Cádiz, Spain
Michel André	Universitat Politècnica de Catalunya, Spain
Mariano Ruíz	Universidad Politécnica de Madrid, Spain

Program committee

- M1: Instrumentation and Metrology: Helena Ramos (IST), Albert Garcia (UPC)
- M2: Ocean bottom sensors and observatories: Valentí Sallarès (CSIC-UTM), Xavier Garcia (CSIC-UTM)
- M3: Control Systems. Marine Robotics. ROVs, AUVs, ASVs, Gliders: Pere Ridao (Universitat de Girona), William Kirkwood (MBARI)
- M4: Underwater imaging and communication: Gabriel Oliver (Universitat Illes Balears), Ramon Reig (Universitat de Vic)
- M5: Seafloor characterization and seismic imaging: Eulalia Gràcia (CSIC-UTM), Claudio Lo Iacono (CSIC-UTM)
- M6: Advanced remote sensing of the ocean surface: Marc Portabella (CSIC-UTM)
- M7: Signal processing: Carine Simon (CSIC-UTM), Erik Molino (UPC)
- M8: Mechanical structures design: Rafael Sitjar (UPC)
- M9: Marine biology technology: Jacopo Aguzzi (CSIC-ICM), Corrado Costa (AgritechLab)
- M10: High resolution measurement systems. Acquisition and analysis methods : Jaume Piera (CSIC-UTM), Vicenç Parisi (UPC)
- M11: Interoperability in sensors networks. Data Management : Joaquin del Rio (UPC), Yves Auffret (Ifremer)
- M12: New trends in marine sensors design: Shahram Shariat (UPC), Laurent Delauney (Ifremer)
- M13: Bioacoustics and Passive Acoustic Monitoring Techniques : Michel André (UPC), Cédric Gervaise (ENSIETA)

Organizing committee

Antoni Mànuel-Làzaro	General Co-Chair
Rafael Bartolomé	General Co-Chair
Spartacus Gomàriz	Program Chair
Josep Santamaría	Sponsor and Exhibition Chair
Iris Santamaría	Proceedings
Alberto Martínez	Proceedings
Alberto Hidalgo	Web Chair
Joaquín del Río	Local Arrangements Chair
Neus Vidal	Conference Secretary

Welcome

- **Dr. Francesc Xavier Gil**
Research and Innovation Vice-Chancellor
Universitat Politècnica de Catalunya
- **Dr. Juan José de Damborenea**
Deputy Vicepresident of Scientific-Technical Areas CSIC
Consejo Superior de Investigaciones Científicas
- **Dr. Fidel Echevarría**
Gestor del Plan Nacional de Ciencia y Tecnología Marina
Ministerio de Ciencia e Innovación.
- **Sr. Joan Ignasi Elena**
Vilanova i la Geltrú Mayor

Program

Thursday, November 19		Friday, November 20
8.30	Registration	Registration
9.00 – 9.30	Welcome	Regular Sessions RS5
9.30 - 10.00	Invited Conference (I) <i>Dr. Jordi Font</i>	
10.00 - 10.30	Regular Sessions	Invited Conference (III) <i>Dr. William Kirwood</i>
10.30 - 11.00	RS1-A, RS1-B	
11.00 – 11.45	Poster Sessions & Coffee PS1-A, PS1-B, PS1-C	Poster Sessions & Coffee PS3-A, PS3-B, PS3-C
11.45 – 13.15	Regular Sessions RS2-A, RS2-B	Regular Sessions RS6-A, RS6-B
13.15 – 14.45	Lunch	Lunch & Closing
14.45 – 16.15	Regular Sessions RS3-A, RS3-B	
16.15 – 17.00	Invited Conference (II) <i>Dr. Roland Person/ Dr. Paolo Favali</i>	
17.00 – 17.30	Poster Sessions & Coffee PS2-A, PS2-B, PS2-C	
17.30 – 19.00	Regular Sessions-Demonstration RS4	
20.30	Gala Dinner	

Regular Session

- RS1-A: Ocean bottom sensors
 RS1-B: Marine Biology Technology
 RS2-A: Advanced Remote Sensing of the Ocean Surface
 RS2-B: Instrumentation and Metrology
 RS3-A: Advanced Remote Sensing of the Ocean Surface
 RS3-B: Signal Processing
 RS4: Interoperability in sensors networks. Data Management. Demonstration
 RS5: Ocean observatories and Marine Robotics
 RS6-A: High resolution measurement systems and underwater imaging
 RS6-B: Bioacoustics and Passive Acoustic Monitoring Techniques

Poster Session

- PS1-A: Ocean bottom sensors
 PS1-B: Marine Biology Technology
 PS1-C: Instrumentation and Metrology
 PS2-A: Signal Processing
 PS2-B: Interoperability in sensors networks. Data Management
 PS2-C: Advanced Remote Sensing of the Ocean Surface
 PS3-A: Ocean observatories and Marine Robotics
 PS3-B: High resolution measurement systems and underwater imaging
 PS3-C: Bioacoustics and Passive Acoustic Monitoring Techniques

Invited Conferences

I. Thursday 19.11.09 9:30

Lecturer: Dr. Jordi Font

ICM- Consejo Superior Investigaciones Científicas

Room: A

SMOS: ESA's Water Mission

ESA's Water Mission, otherwise known as the Soil Moisture and Ocean Salinity Mission (SMOS) was selected as the second Earth Explorer opportunity mission to be implemented and is expected for launch in July 2009. SMOS single payload, an interferometric microwave radiometer, shall provide global observations of soil moisture and ocean salinity to improve our understanding of the Earth's hydrological cycle.

II. Thursday 19.11.09 16:15

Lecturer: Dr. Roland Person

Ifremer centre de Brest

Room: A

ESONET NoE : Status of the project

The ESONET NoE project is now running for more than two years and will be continued at least until February 2011. we will present the first results. 6 demonstrations were funded and are running: LIDO, Marmara DM, Momar DM, MODOO, LOOME and AOME on seven of the proposed sites. They will allow to demonstrate the interest of permanent observatories and contribute to the definition of the implementation plan for these sites. Standardisation efforts are progressing well. A guide for underwater intervention was published. Groups are working on "smart sensors" in Spain, France and Germany. All these results will be discussed during the second "best practices meeting on October 8-9th". A first draft of the "ESONET label" was established. It has to circulate between partners for approval.

Lecturer: Dr. Paolo Favali

Istituto Nazionale di Geofisica e Vulcanologia

Università "Sapienza", Roma (Italy)

Room: A

Seafloor observatories from experiments and projects to the European permanent underwater network EMSO

The establishment of a global network of seafloor observatories will help to provide the means to understand the ocean, and the complex physical, biological, chemical, and geological systems operating within it. This is a challenge for the opening decades of the 21st century. The EC experience on seafloor monitoring is outlined since the early stage (beginning of '90s). In particular, the attention is focused on the GEOSTAR experience, describing the technical characteristics and the sensors used in experiments. Some recent projects are detailed. Finally, the European effort towards permanent underwater network EMSO, one of the large-scale research infrastructures included in the ESFRI Roadmap, is also discussed. All the previous activities are framed in this context.

III. Friday 19.11.09 10:30

Lecturer: Dr. William Kirkwood

Monterey Bay Aquarium Research Institute. USA

Room: A

Fault Tolerant Actuation for Dorado Class AUVs

This paper describes a new control surface actuating design for the Monterey Bay Aquarium Research Institute (MBARI) Dorado class AUVs. The intent was to increase reliability as part of obtaining the goal to greatly increase access to the Arctic Ocean. The new actuating mechanism is part of creating a robust and economical solution towards increased reliability and fault tolerance. Specifically, as part of developing the ALTEX Autonomous Underwater Vehicle (AUV) for Arctic research with basin scale endurance, the concept for under ice missions was redundancy in critical areas. As the development of the DORADO systems progressed from the original ALTEX concepts, added drivers came from the operations group looking for more useable volume in the aft section.

Regular Sessions:

RS1-A: Ocean bottom sensors

Thursday, November 19. 10.00-11.00. Room: A

Chair: Dr. Valentí Sallarés

- **Seabed Seismic Coupling – Testing and Evaluation Problems**
Tim Owen.
Carrack Measurement Technology
- **Time base stability of Ocean Bottom Seismometers (OBS)**
S. Shariat-Panahi (1), A. Mànuel Lázaro (1), F. Corrêa Alegria (2)
(1)Technical University of Catalonia , (2)Instituto Superior Tecnico de Lisboa
- **A permanent submarine observatory in alboran and the long term OBS fomar network: news**
Antonio Pazos1, José Martín Davila1, Elisa Buforn2, Agustín Udías2 and ROA seismic group1.
(1) Real Observatorio de la Armada (2) Universidad Complutense de Madrid
- **Overview of existing instrumentation relevant for ocean observatories**
Anders Tengberg
University of Gothenburg and Aanderaa Data Instruments

RS1-B: Marine Biology Technology

Thursday, November 19. 10.00-11.00. Room: B

Chair: Dr. Jacopo Aguzzi

- **Fish telemetry and positioning from an autonomous underwater vehicle (AUV)**
Grothues, Thomas M. and Joseph A. Dobarro
Rutgers University Marine Field Station
- **Coastal and marine landscape ecology based on marine geospatial data infrastructure for analysis of marine resources and fishing effort**
Leonardo Marotta 1, Jacopo Aguzzi2
1Entropia Snc and University IUAV of Venice
2Instituto Ciencias del Mar. (CSIC)
- **Potential applications of automated video-image analysis in the pelagic and demersal environment including the deep-sea**
J. Aguzzi (1), Costa C. (2), Menesatti P. (2), Manuel A. (3), Del Río J. (3), García J.A. (2)
Fujiwara Y. (4), Iwase R. (4)
(1) Instituto de Ciencias del Mar (2) AgritechLab (3) SARTI (4) JAMSTEC

RS2-A: Advanced Remote Sensing of the Ocean Surface

Thursday, November 19. 11.45-13.15. Room: A

Chair: Dr. Marcos Portabella

- **EUMETCast receiving station integration within the SATellite Image Database INterface (SAIDIN) system**
Òscar Chic
Coastal Ocean Observatory. Institut de Ciències del Mar, CSIC
- **17 years of European Altimetric Missions and their Calibration**
Mònica Roca
isardSAT

- **Post - processing methods for ocean monitoring from SAR imagery**
Marivi Tello, Carlos López-Martínez, Jordi J. Mallorqui, Paco López-Dekker
Universitat Politècnica de Catalunya
- **ASCAT scatterometer wind data processing**
Marcos Portabella 1, Ad Stoffelen 2, Maria Belmonte 2, Anton Verhoef 2, Jeroen Verspeek 2, Jur Vogelzang 2
(1) Unidad de Tecnología Marina. CSIC, (2) Royal Netherlands Meteorological Institute
- **Issues in the Balancing of the SMOS Ocean Salinity Retrieval Cost Function**
R. Sabia 1,2, A. Camps 1,2, M. Portabella 2,3, M. Talone 1,2, J. Ballabrera 2,4, J. Gourrion 2,4, A.L. Arétxabaleta 2,4, C. Gabarró 2,4, and J. Font 2,4
(1) Universitat Politècnica de Catalunya, (2) SMOS Barcelona Expert Centre on Radiometric Calibration and Ocean Salinity (3) Unidad de Tecnología Marítima, CSIC (4) Institut de Ciències del Mar

RS2-B: Instrumentation and Metrology

Thursday, November 19. 11.45-13.15. Room: B

Chair: Dr. Helena Maria Ramos

- **TEMPO-Mini: a custom-designed instrument for real-time monitoring of hydrothermal vent ecosystems**
Yves Auffret, Jean-Yves Coail, Laurent Delauney, Julien Legrand, Jacky Dupont, Loic Dussud, Gérard Guyader, Anthony Ferrant, Stéphane Barbot, Agathe Laes, Karen Bucas, Jozée Sarrazin, Pierre-Marie Sarradin
IFREMER, centre de Brest
- **Experimental electronic instrument for a hydraulic towing winch**
Perfecto Mariño, Fernando Machado and Francisco Poza
University of Vigo, Spain
- **The effect of hysteresis on the fluxgate sensor behaviour**
A. Lopes Ribeiro
Instituto de Telecomunicações, Instituto Superior Técnico
- **Smart Sensors Monitoring Nodes and GIS for Dolphins' Environment Assessment**
O. Postolache 1,2, J. Apolonia 2, N. Beirante 2, Miguel Pereira 1,2, P. Girão 1
(1) Instituto de Telecomunicações, (2) Instituto Politécnico de Setúbal
- **Conductivity cell for water quality monitoring**
Sérgio Ramalho 1, Helena M. Geirinhas Ramos 1,2 and Pedro Ramos 1,2
(1) Instituto de Telecomunicações (2) Instituto Superior Técnico

RS3-A: Advanced Remote Sensing of the Ocean Surface

Thursday, November 19. 14.45-16.15. Room: A

Chair: Dr. Antonio Turiel

- **Dynamic effect of quasi-geostrophic turbulence on ocean surface as derived from satellite imagery**
A. Turiel
Institut de Ciències del Mar
- **Preparing Levels 3 and 4 for the SMOS mission**
Jerôme Gourrion 1,2, Baptiste Mourre 1,2, Joaquim Ballabrera 1,2, Alfredo Arétxabaleta 1,2, and Antonio Turiel 1,2

(1) ICM-CSIC, (2) SMOS-Barcelona Expert Centre

- **Potential use of microwave satellite measurements to reconstruct the three-dimensional dynamics of the oceanic upper layers**
Jordi Isern-Fontanet 1, Bertrand Chapron 2, Patrice Klein 3, Guillaume Lapeyre 4
 (1) Institut Català de Ciències del Clima, (2) Laboratoire d'Océanographie Spatiale (3) Laboratoire de Physique des Océans, (4) Laboratoire de Météorologie Dynamique
- **Sea-ice remote sensing with gnss reflections**
Cardellach Estel, Belmonte-Rivas Maria, Fabra Fran, Nogué-Correig Oleguer, Oliveras Santiago, Ribó Serni, Rius Antonio
 ICE (IEEC-CSIC)
- **Ocean Monitoring using GNSS-R Techniques and Microwave Radiometry: the PAU Instrument Concept**
Adriano Camps, Xavier Bosch-Lluis, Isaac Ramos-Perez, Juan Fernando Marchan-Hernandez, Enric Valencia-Domenech, Nereida Rodriguez-Alvarez
 Universitat Politècnica de Catalunya

RS3-B: Signal Processing

Thursday, November 19. 14.45-16.15. Room: B

Chair: Dr. Carine Simon

- **Incoherent versus Coherent Matched Mode Processing for shallow water source localisation using a single hydrophone**
B. Nicolas¹, G. Le Touzé¹, C. Soares², S. Jesus², J.I. Mars¹
 (1)GIPSA-LAB, (2) FCT-Universidade do Algarve
- **New methodological approach to estimate the turbulent kinetic energy dissipation rate (ϵ)**
R.Quesada (1), M. Lara (2), J.Piera (3), E.Berdalet (2)
 (1) Technical University of Catalonia. (2) Institute of Marine Sciences (3) Marine Technology Unit
- **Time-scale slowness adaptive filters**
S. Ventosa (1), C. Simon (1), M. Schimmel (2) and JJ. Dañobeitia (1)
 (1) Unitat de Tecnologia Marina (CSIC) (2) Institut de Ciències de la Terra Jaume Almera
- **An evaluation of soil moisture downscaling techniques using L-band airborne observations**
María Piles, Mercè Vall-llossera, Adriano Camps, and Marco Talone
 Universitat Politècnica de Catalunya. SMOS Barcelona Expert Centr., CMIMA
- **Normality tests analysis of radiometric signals for radio frequency interference detection**
J. M. Tarongi, A. Camps
 CMIMA
- **The diagonal of the TT transform: computation and meaning**
C. Simon (1), JJ. Dañobeitia (1) and A. Mànuel (2)
 (1) Unitat de Tecnologia Marina (CSIC)(2) Technical University of Catalonia

RS4: Interoperability in sensors networks. Data Management. Demonstration

Thursday, November 19. 17.30-19.00. Room: A

Chair: Dr. Christoph Waldman

- **Smart Sensor interface for sea bottom observatories**
Joaquín del Río¹, Yves Auffret², Daniel Mihai Toma¹, Shahram Shariat¹, Xavier André², Stéphane Barbot², Eric Menut², Yannick Lenault², Antoni Manuel¹, Oussama Kassem Zein³, Joel Champeau³, Dominique Kerjean³
(1)Technical University of Catalonia (2)Ifremer, Centre de Bres t(3)Ensieta,
- **Securing on-the-instrument “plug and work” device drivers**
Jesper Zedlitz, Norbert Luttenberger
Universität zu Kiel
- **Evaluation of MBARI PUCK protocol for interoperable ocean observatories**
Joaquin del Rio¹, Tom O'Reilly², Kent Headley², Duane Edgington², Dan Toma¹, Jesper Zedlitz⁷, Frank Johnson³, Greg Johnson³, Eric Davis⁴, Klaus Schleisiek⁵, Neil Cater⁴, Reo Phillips⁶, Eric Delory⁸, Christoph Waldman⁹
(1)Technical University of Catalonia (2)MBARI, (3)RBR, (4) University of Newfoundland, (5) SEND, (6) AXYS, (7)Kiel University, (8) dBScale, (9) MARUM University

RS5: Ocean observatories and Marine Robotics

Friday, November 20. 9.00-10.30. Room: A

Chair: Dr. Pere Ridau

- **Pose-Based SLAM with Probabilistic Scan Matching Algorithm using a Mechanical Scanned Imaging Sonar**
Angelos Mallios, Pere Ridau, Emili Hernández and David Ribas
University of Girona
- **The ictineu 3 project: a modern manned submersible for scientific research and intervention**
Alex Alcocer, Pere Forès, Gian Piero Giuffrè, and Carme Parareda
Ictineu Submarins S.L.
- **PLOCAN, an off-shore environmentally sustainable infrastructure to accelerate ocean research, development and innovation at increasing depths**
Joaquín Hernández-Brito, Eric Delory, Octavio Llinás
Canary Islands Oceanic Platform
- **Data communication and control systems implementation in the OBSEA**
Carola Artero¹, Marc Nogueras¹, Juanjo Dañobeitia², Antoni Mànuell
(1) Technical University of Catalonia (2) Unidad de Tecnología CSIC
- **The NeMO Project Status**
Mario Sedita, Rosanna Cocimano, for the NeMO collaboration
INFN-LN
- **Telecom submarine cables, a business compatible with the environment protection**
Isabel Alcocer Tena
Telefónica España, Marine Operations Consultant

RS6-A: High resolution measurement systems and underwater imaging

Friday, November 20. 11.45-13.15. Room: A

Chair: Dr. Vicenç Parisi

- **Robust and Accurate Monitoring of Guadalquivir Estuary Waters: a High-Resolution and Low-Maintenance System for Water Quality and Hydrodynamics**
Francisco J. Gutiérrez¹, Gabriel Navarro¹, David Roque¹, Raúl García¹, José Luis Fernández², Miguel Ángel Losada³ y Javier Ruiz¹.
(1) Instituto de Ciencias Marinas de Andalucía (C.S.I.C) (2) Autoridad Portuaria de Sevilla (3) Universidad de Granada.
- **Identification of Phytoplankton Pigment Assemblages Using Derivative Spectroscopy of Hyperspectral Remote-Sensing Reflectances**
E. Torrecilla (1), J. Piera (1), D. Stramski (2), R. Reynolds (2), E. Millán-Nuñez (3)
(1) CMIMA-CSIC (2) Univ. of California (3) CICESE, Oceanografía Biológica
- **Potential Support Vector Machines for phytoplankton fluorescence spectra classification: Comparison with Self-Organizing Maps**
Ismael F. Aymerich^{1,2}, Jaume Piera¹, Johannes Mohr⁴, Aureli Soria-Frisch³ and Klaus Obermayer⁴
(1) Marine Technology Unit (CSIC), (2) Universitat Politècnica de Catalunya (3) Starlab (4) Technische Universität Berlin
- **Automated video-image analysis for the analysis of the behaviour of deep-water lobsters (*Nephrops norvegicus*)**
Sergi Pons¹, Jacopo Aguzzi², Jaume Piera¹
(1) UTM-CSIC, CMIMA – (2) ICM-CSIC, CMIMA
- **Trinocular system for 3D motion and dense structure estimation**
Ricard Campos, Jordi Ferrer, Miquel Villanueva, Lluís Magí and Rafael García
University of Girona,
- **Integration of optical and acoustic sensors for 3D underwater scene reconstruction**
N. Hurtós, X. Cufí, J. Salvi
Universitat de Girona

RS6-B: Bioacoustics and Passive Acoustic Monitoring Techniques

Friday, November 20. 11.45-13.15. Room: B

Chair: Dr. Michel André

- **Real time classification of sperm whale clicks and shipping impulses from fixed ocean observatories**
Serge Zaugg (1), Mike van der Schaar (1), Ludwig Houégnigan (1), Michel André (1)
(1) Universitat Politècnica de Catalunya
- **A 3-D real-time algorithm based on array processing for the localization of cetaceans**
Ludwig Houégnigan (1), Serge Zaugg (1), Mike van der Schaar (1), Michel André (1)
(1) Universitat Politècnica de Catalunya
- **Cetacean ultrastructural cochlear imaging through scanning electron microscopy**
Maria Morell¹, Marc Lenoir², Jean-Luc Puel², Thierry Jauniaux³, Eduard Degollada¹, Michel André¹

1 Universitat Politècnica de Catalunya (2) Institut des Neurosciences de Montpellier. (3) Université de Liège

- **Architecture for the Real-Time Monitoring of Noise Pollution and Marine Mammal Activity**

*Mike van der Schaar¹, Serge Zaugg¹, Ludwig Houégnigan¹, Joan V. Castell¹, Michel André¹
(1) Universitat Politècnica de Catalunya*

- **Electronic upgrades on the second generation of an autonomous and portable cetacean auditory screening system.**

*Alex Mas¹, Joan V. Castell¹, Joaquin del Rio¹, Mike van der Schaar¹, Michel André¹
¹, Technical University of Catalonia.*

- **Imaging Techniques to study the effects of low frequency sounds on Cephalopods spp.**

*Marta Solé¹, Antonio Lombarte², Manel López Bejar³, Alex Mas¹ and Michel André¹
(1) Universitat Politècnica de Catalunya, (2) Institut de Ciències del Mar. Consejo superior de Investigaciones Científicas. (3) Universitat Autònoma de Barcelona*

- **Modeling the underwater noise associated to the construction and operation of offshore wind turbines**

*Joan V. Castell¹, Mike van der Schaar¹, Alex Mas¹, Serge Zaugg¹, Ludwig Houégnigan¹,
Maria Morell¹, Marta Solé¹, Michel André¹
¹Universitat Politècnica de Catalunya*

Poster Sessions:

PS1-A: Ocean bottom sensors

Thursday, November 19. 11.00-11.45

- **Underwater Seismometer Validation**
Xavier Roset, Marc Nogueras, Albert Garcia
Universitat Politècnica de Catalunya
- **Integration of a permanent OBS offshore NE Iberian Peninsula to the Catalan Seismic Network**
C. Olivera(1), T. Frontera (1), A. Ugalde (1), J. Jara (2) and X. Goula (1)
(1) Institut Geològic de Catalunya, (2) GEOCAT
- **Paleoseismology of active faults based on multiscale seismic imaging**
Ximena Moreno1, Eulàlia Gràcia1, Rafael Bartolomé1, Claudio Lo Iacono1*
1Unitat de Tecnologia Marina, CSIC
- **Very high-resolution seismo-acoustics in the study of seagrasses. The case of Posidonia oceanica (Mediterranean Sea)**
Claudio Lo Iacono, Eulàlia Gràcia, Juanjo Dañobeitia
Unidad de Tecnología Marina, CSIC
- **Wide-angle reflection and refraction seismic profile from the outer part of the Gulf of Cadiz: NEAREST-SEIS cruise**
Sara Martínez-Loriente, Valentí Sallarès, Rafael Bartolomé, Eulàlia Gràcia and NEAREST-SEIS cruise party.
Unitat de Tecnologia Marina-CSIC,

PS1-B: Marine Biology Technology

Thursday, November 19. 11.00-11.45

- **Application of geometric-morphometric, hyperspectral imaging and molecular markers to the study of depth-driven differences in populations of Decapods (Crustacea)**
Jacopo Aguzzi1, Corrado Costa2, Juan Batista Company1, Francesca Antonucci2, Federico Pallottino2, Paolo Menesatti2, Emiliano Canali2, Stefano Giorgi2, Claudio Angelini3, Valerio Ketmaier4
(1)Institut de Ciències del Mar (CSIC), (2)CRA-ING (3) Università La Sapienza (4) University of Potsdam
- **Otolith growth allometry measurements in the European EEL**
F. Capoccioni (1), C. Costa (2), P. Menesatti (2), A. Lombarte (3), J. Aguzzi (3), E. Ciccotti (1)
(1) University of Rome Tor Vergata, (2) CRA-ING (3) Institut de Ciències del Mar (CSIC)
- **Colour calibration for quantitative biological analysis: a novel automated multivariate approach**
Corrado Costa1, Federico Pallottino1, Claudio Angelini2, Marco Proietti2, Fabrizio Capoccioni3, Jacopo Aguzzi4, Francesca Antonucci1, Paolo Menesatti1
(1)CRA-ING (2) Uomo, Università La Sapienza (3) University of Rome (4)Institut de Ciències del Mar

PS1-C: Instrumentation and Metrology

Thursday, November 19. 11.00-11.45

- **Conformity of the quality in the measures**
Albert Garcia, David Palmero, Eva Vaqué, Antoni Mánuel
Universidad Politécnica de Catalunya
- **Design and Deployment of Low-Cost Drifting Buoys for Coastal Monitoring Applications.**
Francisco J. Gutiérrez, Gabriel Navarro, Raúl García, David Roque and Javier Ruiz.
Instituto de Ciencias Marinas de Andalucía (C.S.I.C)
- **Modeling for the implementation of feigned prototype for the characterization of communications among nets of wide band plc and wi-max**
José Roberto Ramírez Cervantes / Héctor Enrique Gaona Flores
Universidad Autónoma del Estado de México
- **Decorative PVD coatings as an environmentally clean alternative to chrome plating**
J.A. Picas, M.T. Baile, S. Menargues, E. Martin, A. Forn.
Technical University of Catalonia
- **Watertight tests for OBSEA equipments in the hyperbaric chamber**
Norman Carreras, Marc Nogueras, Alejandro Arbós, Antoni Mánuel
Technical University of Catalonia
- **Power Supply Control of the OBSEA Seafloor Observatory**
Xavier Palou, Marc Nogueras, Antoni Mánuel
Technical University of Catalonia
- **Cabling, connectors and splices structure for the OBSEA. Expandable Subsea Observatory**
Josep Santamaria, Marc Nogueras, Antoni Manuel
Technical University of Catalonia
- **A simple approach for modeling impact force parameters for different materials**
Erik Molino Minero Re, Antoni Mánuel Lázaro
Polytechnic University of Catalonia

PS2-A: Signal Processing

Thursday, November 19. 17.00-17.30

- **Principal component analysis to compress acquired data offshore**
Juan Luis Larrabe (1), Miguel Angel Gómez (1), Francisco José Alvarez (2), Elena Gastiasoro (2), M. Carmen Rey (2), Victoria E. Mielgo (2), Enrique Hilario (2)
(1) University of Basque Country, (2) Research Unit; Hospital of Cruces
- **A software for time series analysis of nortek instruments: tsa_nortek_v1**
Águeda Vázquez¹, Miguel Bruno², Rafael Mañanes², Oswaldo López³, José Manuel Quijano⁴, Juan Ramón Conforto⁴
(1) Universidad de Málaga (2) Universidad de Cádiz, (3) Innova oceanografía litoral (4) Instituto Hidrográfico de la Marina
- **Improve reliability using Hotelling T2 technique in a liquefied natural gas plant**
Miguel Angel Gomez Solaetxea, Juan Luis Larrabe Barrena
University of Basque Country.

PS2-B: Interoperability in sensors networks. Data Management

Thursday, November 19. 17.00-17.30

- **A Multilayer Service Data Acquisition and Operation System for Oceanographic ships and Instrumentation Networks**
E. Arilla¹, D. Afonso¹, O. Garcia¹, A. Hernández¹, J. Olivé¹, J. L. Ruiz¹, X. Romero¹, A. Sandoval,¹ J. A. Serrano¹, J. Sorribas¹, E. Trullols², J. del Río²
(1) Unidad de Tecnología Marina. CSIC, (2)Universitat Politècnica de Catalunya
- **Satellite Communication Systems Onboard Two Spanish Oceanographic Vessels**
D. Afonso, E. Arilla, O. Garcia, A. Hernández, J. Olivé, J. L. Ruiz, X. Romero, A. Sandoval J. A. Serrano, J. Sorribas
Unidad de Tecnología Marina. CSIC
- **An on-board data management solution**
E Tel⁽¹⁾, J Rivera⁽¹⁾, JM Cabanas⁽²⁾, JM Vazquez⁽³⁾, S Carballo⁽⁴⁾, R Minguenez⁽²⁾, M Gallardo⁽³⁾, C Amutio⁽³⁾
(1)Inst. Esp. Oceanografía (IEO). (2)SIMRAD (3)DIXITA SL
- **Geographic Information System Architecture Applied To Oceanographic Data Acquisition Systems**
J. Olivé, E. Arilla, D. Afonso, O. Garcia, A. Hernández, J. L. Ruiz, X. Romero, A. Sandoval J. A. Serrano, J. Sorribas
Unidad de Tecnología Marina. CSIC
- **ICZM technologies for integrating data and support decision making**
Leonardo Marotta
Entropia Snc and University IUAV of Venice
- **OBSEA WEB: Design and Implementation**
A. Hidalgo (1), I. Santamaria (2), J. Santamaria (1)
(1) Technical University of Catalonia, (2) Melmak studio audiovisual
- **OBSEA Servers Network**
Javier Cadenal, Marc Nogueras¹, Alberto Hidalgo¹, Jordi Sorribas², Oscar García²
(1) Technical University of Catalonia (2) Unidad de Tecnología Marina CSIC
- **Scientific information resources and bibliometric indicators for the research performance assessment**
Adrià Martin Cantos
Universitat Politècnica de Catalunya

PS2-C: Advanced Remote Sensing of the Ocean Surface

Thursday, November 19. 17.00-17.30

- **Aplication of remote sensing techniques to the study of internal waves in the strait of gibraltar**
Águeda Vázquez¹, Gabriel Navarro², Susana Flecha² y Miguel Bruno³
(1) Universidad de Málaga (2) Instituto de Ciencias Marinas de Andalucía, (3) Universidad de Cádiz

PS3-A: Ocean observatories and Marine Robotics

Friday, November 20. 11.00-11.45

- **Ant colony optimized planning for unmanned surface marine vehicles**
J.M. Benitez, Juan F. Jimenez, Jose M. Giron-Sierra
Universidad Complutense de Madrid

- **Classification of mathematical models to compute useful in the treatment of irrigation district mexico 03**
Hector Enrique Gaona
Universidad Autónoma del Estado de México
- **Pressure hull design and construction of the manned submersible ictineu 3**
Alex Alcocer, Pere Forès, Gian Piero Giuffré, Carme Parareda
Ictineu Submarins SL
- **Autonomous vehicle development for vertical submarine observation**
S. Gomàriz, J. Prat, A. Arbos, O. Pallares C. Viñolo
Technical University of Catalonia
- **Towards the ecological dredger**
Sergio RodriguezI, Alberto LagoI, Aritz VillodasI and Artzai PicónI
Infotech Unit, Robotiker-Tecnalia
- **Small Scale Underwater Change Detection**
O. Delaunoy, N. Gracias, R. Garcia
University of Girona

PS3-B: High resolution measurement systems and underwater imaging

Friday, November 20. 11.00-11.45

- **ANERIS: Development of an intelligent oceanographic probe with high resolution autonomous sampling and collecting capabilities.**
V. Cano (1), N. Pujol (2), J. Piera (2), E. Torrecilla (2), I. F. Aymerich (3), S. Pons (2)
(1) Marine Sciences Institute (CSIC) (2) Marine Technology Unit (CSIC).(3) Technical University of Catalonia

PS3-C: Bioacoustics and Passive Acoustic Monitoring Techniques

Friday, November 20. 11.00-11.45

- **An automated, real time classification system for biological and anthropogenic sounds from fixed ocean observatories**
Serge Zaugg (1), Mike van der Schaar (1), Ludwig Houégnyan (1), Michel André (1)
(1) Universitat Politècnica de Catalunya