8th International Workshop on Modeling the Ocean (IWMO)

Aula Giorgio Prodi,
Piazza di S. Giovanni in Monte 2, BOLOGNA
7-10 June 2016
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Program

June 7, 2016

08.30 - 09.00  Registration
09.00 - 09.30  Conference Opening
09.30 - 10.00  KEYNOTE PRESENTATION: Simona Masina; INGV-CMCC, Bologna, Italy
  Reconstructing the past ocean variability from reanalyses
10.00 - 10.30  Coffee Break
10.30 - 12.15  Climate dynamics and modelling (Chairperson: L. Oey)

• Shiqiu Peng, South China Sea Institute of Oceanology, Chinese Academy of Sciences, Guangzhou, China: A reanalysis dataset of the South China Sea

• A. Cherchi, CMCC, Italy: Issues of the Indian Ocean warming in atmospheric and oceanic global re-analyses

• G. Verri, CMCC, Italy: River runoff influences on the Central Mediterranean Overturning Circulation (OYSA)

• Jinyu Sheng, Dalhousie University, Canada: Impacts of Climate change on the ocean wave climate over the northwest Atlantic Ocean (OYSA)

• Shiming Xu, Tsinghua University, China: Schwarz-Christoffel conformal mapping based grids for high resolution ocean models

• R. De Camargo, University of Sao Paulo, Brazil: Storm surges in the Western South Atlantic: generation and propagation

• Xunqiang Yin, First Institute of Oceanography, SOA, China: Development of EAKF assimilation system in FIO-ESM and reconstruction of climate reanalysis data

12.15 - 13.30 Lunch

13.30 - 14.00 KEYNOTE PRESENTATION: A. Blumberg; Stevens Institute of Technology
Hoboken, USA
Forecasting and Visualization to Support America’s Cup Sail Boat Racing

14.00 - 15.00 Coastal interdisciplinary modelling (Session One, Chairperson J. Wang)

• G. Shapiro, Plymouth University, UK: Exchanges between the shelf and the deep Black Sea

• G. Verri, CMCC, Italy: Estuarine dynamics for ocean modeling: the case study of the Ofanto estuary (OYSA)
• A. Manome, University of Michigan, USA: Simulating hydrodynamics and ice cover in Lake Erie using an unstructured grid model

• A. Dudkowska, University of Gdańsk, Poland: Trigger conditions for bedload transport induced by wind wave and currents in the Gulf of Gdańsk

15.00 - 15.30 Coffee Break

15.30 - 16.00 KEYNOTE PRESENTATION: E. Stanev: Helmholtz Zentrum Geesthacht, Germany
Ocean Forecasting: From Regional to Coastal Scales

16.00 - 17.15 Coastal interdisciplinary modelling (Session Two Chairperson J. Berntsen)

• Jinyu Sheng, Dalhousie University, Canada: Hydrodynamic connection between the Gulf of Saint Lawrence and adjacent coastal and shelf waters of the of the northwestern Atlantic Ocean

• P. de Ruggiero, Università di Napoli Parthenope, Italy: A high-resolution modelling study of the circulation along the Campania Coastal System

• A. Cucco, CNR/IAMC, Italy: Predictability of wind induced sea surface transport in coastal areas

• J.E.H. Weber, University of Oslo, Norway: Mean currents induced by spatially damped internal Kelvin waves: Application to Van Mijenfjorden in Svalbard

• Zhingang Xu, Maurice Lamontagne Institute, Fisheries and Oceans, Canada: Modelling Ocean Tides with an All-Source Green Function and the JPL Solar System Ephemeris

17.15 - 18.30 Poster session and Cocktail
June 8, 2016

09.15 - 10.00 Coastal interdisciplinary modelling (**Session Three Chairperson M. Zavatarelli**)

- Yign Noh, Yonsei University, South Korea: *Large Eddy Simulation of Particle Settling in the Ocean Mixed Layer*

- B. Viikmäe, Tallinn University of Technology, Estonia: *Temporal scale for nearshore hits of current-driven pollution in the Gulf of Finland*

- Vivien P. Chua, National University of Singapore, Singapore: *Development of a Coupled-Hydrologic Model to simulate pollutant transport in Singapore coastal water (OYSA)*

10.00 - 10.30 KEYNOTE PRESENTATION: P. F.J. Lermusiaux; MIT, Boston, USA

*Internal-tide Interactions with the Background Ocean: The case of the Gulf Stream and Middle Atlantic Bight Shelfbreak Front*

10.30 - 11.00 Coffee Break

11.00 - 12.30 Circulation and dynamics (**Session One Chairperson T. Ezer**)

- Toru Miyama, JAMSTEC, Japan: *Eddy-Topography Interaction Produces Quasi-stationary Jet between the Subtropical and the Subarctic Gyres in the North Pacific Ocean (the Isoguchi Jet)*

- Tal Ezer, Old Dominion University, USA: *Revisiting the problem of the Gulf Stream separation: on the representation of topography in ocean models*

- E. Napolitano, ENEA-SSPT-MET-CLIM, Italy: *Recent advances in the understanding of the Tyrrenian Sea dynamics*

- Jianping Gan, Hong Kong University of Science and Technology, China: *A three-layer alternating spinning circulation in the South China Sea*

- Agostino Niyonkuru Meroni, University of Milan - Bicocca, Italy: *Nonlinear interactions among Ocean internal waves in the wake of a moving cyclone*
• Jia Wang, NOAA, USA: *Inertial Instability of Time Integration Schemes in Widely-Used Ocean General Circulation Models*

12.30 - 13.30 Lunch

13.30 - 15.00 *Circulation and dynamics (Session Two Chairperson E. Stanev)*

• Wen-Zhou Zhang, Xiamen University, China: *Volume transport through the Taiwan Strait and the effect of synoptic events*

• Hongyang Lin, Xiamen University, China: *Submesoscale variability in the upper northern South China Sea (OYSA)*

• Xiaofei Yi, Guangdong Ocean University, China: *Statistical analysis of near-inertial oscillations in Xisha area of the South China Sea using mooring observations*

• C. Fratianni, INGV, Italy: *A 60 years ocean reanalysis for the study of the Mediterranean Sea circulation*

• G. Sannino, ENEA, Italy: *Toward an integrated Mediterranean and Black Sea regional model*

• J. Berntsen, University of Bergen, Norway: *Dense water flows – effects of rotation*

15.00 - 15.30 Coffee Break

15.30 - 16.00 *KEYNOTE PRESENTATION: B. Perez-Gomez; Puertos de Estado, Spain*

Nowcast and forecast of sea level hazards

16.00 - 17.15 *Ocean predictions (Chairperson A. Blumberg)*

• E. Clementi, INGV, Italy: *The Mediterranean Forecasting System in the Copernicus Marine Service: last improvements and skill assessment*

• Boonsoon Kang, Korea Hydrographic and Oceanographic Agency, Korea: *Ocean modeling systems in the Korea Hydrographic and Oceanographic Agency (KHOA)*
\begin{itemize}
  \item A. Cipollone, CMCC, Italy: \textit{Towards a fully operational eddying Global Forecasting System (GOFS16)} \textit{(OYSA)}
  \item Do-Seong Byun, Korea Hydrographic and Oceanographic Agency, Korea: \textit{Investigating tidal harmonic prediction approaches used in coastal numerical forecasting models and software}
  \item N. Pinardi, University of Bologna, Italy: \textit{Ocean Ensemble Forecasting: Two Applications using Ensemble Winds from a Bayesian Hierarchical Model}
\end{itemize}

17.15 - 18.00 Poster session and Cocktail

\textbf{June 9, 2016}

09.00 - 10.15 \textbf{Waves, currents and turbulence (Chairperson N. Pinardi)}

\begin{itemize}
  \item Chang Zhao, Key Laboratory of Marine Science and Numerical Modeling, the First Institute of Oceanography, State Oceanic Administration, China: \textit{Long-term transport and dispersion of $^{137}$Cs released into ocean off Fukushima nuclear accident}
  \item Humio Mitsudera, Hokkaido University, Japan: \textit{A mechanism of Ice-Band Pattern Formation caused by resonant interaction between sea ice and internal waves}
  \item Changshui Xia, The First Institute of Oceanography, State Oceanic Administration (SOA), China: \textit{Case Study on the three-dimensional structure of meso-scale eddy in the South China Sea based on a high-resolution model}
  \item Wang Guansuo, First Institute of Oceanography, State Oceanic Administration (SOA), Qingdao, China: \textit{Effect of warm eddy on typhyhnong intensity and development \textit{(OYSA)}}
  \item Tal Ezer, Old Dominion University, USA: \textit{From POM-1996 to IWMO-2016: an overview of 20 years of ocean modeling and users participation}
\end{itemize}
10.15 - 10.45  KEYNOTE PRESENTATION: G. L. Mellor; Princeton University, USA

*On Theories Dealing with the Interaction of Surface Waves and Ocean Circulation*


HOS award will be presented to Prof. George L. Mellor

11.15 - 11.30  Coffee Break

11.30 - 12.30  Air-sea interactions and atmospheric modelling (**Session One Chairperson P. Lermusiaux**)

- A. Cherchi, CMCC, Italy: *Assessment of atmospheric re-analyses and AMIP experiments to force global and regional ocean re-analyses*

- Jun Wei, Peking University, China: *Parameterizing SST cooling induced by tropical cyclones*

- Huijie Xue, South China Sea Institute of Oceanology (SCSIO), Chinese Academy of Science, China; University of Maine, USA: *Numerical simulation of a subseasonal SST warming event in the Bay of Bengal in pre-monsoon season, 2010*

- S. Miladinova, Institute for Environment and Sustainability, CEC Joint Research Centre, Italy: *On the evolution of the Black Sea’s temperature and salinity and effect of atmospheric forcing*

12.30 - 13.30  Lunch

13.30 - 14.00  Air-sea interactions and atmospheric modelling (**Session Two Chairperson H. Xue**)

- R. De Camargo, University of Sao Paulo, Brazil: *Meteorological influences and storm surges in the coast of Mozambique*

- Leo Oey, National Central University, Taiwan: *Multi-scale ocean and atmospheric research in the western North Pacific using the ATOP modelling system and observations*
14.00 - 14.30  KEYNOTE PRESENTATION: M. Gregoire; Université de Liège, Belgium
Modelling hypoxia and its impact on the Good Environmental Status of marine waters. The Black sea case.

14.30 - 15.15  Marine ecosystem modelling (Session One Chairperson S. Masina)

- A. Olita, Institute for Coastal Marine Environment, National Research Council (IAMC-CNR), Italy: Modelling giant red shrimp larval dispersal: density and connectivity patterns
- D. Dişa, Middle East Technical University Institute of Marine Science, Turkey: Stating the Role of Fish and Fisheries on Marine Biogeochemistry through End-To-End Modeling (OYSA)
- Huijie Xue, University of Maine, USA: Nearshore Flow Patterns and Population Connectivity along the Eastern Maine Coast

15.15 – 15.45  Coffee Break

15.45 – 16.30  Marine ecosystem modelling (Session Two Chairperson G. Coppini)

- Jia Wang, NOAA Great Lakes Environmental Research Laboratory, USA: Modelling spring-summer phytoplankton bloom in Lake Michigan with and without riverine nutrient loading using a unstructured-grid model
- G. Mussap, University of Bologna, Italy: A modelling study of the benthic-pelagic coupling in the northern Adriatic Sea. (OYSA)
- C. Solidoro, OGS, Italy: Assessing ecosystem health in the Mediterranean Sea regions under alternative climatic and management scenarios

20.00 - 23.00  Conference Dinner
June 10, 2016

09.00 - 09.30
KEYNOTE PRESENTATION: D. Obaton; Mercator-Ocean (Ramonville Saint-Agne, France)
Ocean & Marine services : the European Copernicus Marine Service

09.30 - 11.00
Ocean and Marine Services  (Chairperson B. Perez Gomez)

- F. Trotta, University of Bologna, Italy: The new Relocatable Ocean Model (SURF)

- A. A. Sepp Neves, University of Bologna, Italy: Quantitative oil spill hazard mapping: statistical distribution, identification of hot spots and predicting events (OYSA)

- G. Coppini, CMCC, Italy: Mediterranean ocean forecasting products in support marine safety applications

- S. Simoncelli, INGV, Italy: The EMODnet MedSea Checkpoint

- R. Lecci, CMCC, Italy: Sea Conditions: present and future sea conditions for safer navigation

- E. Jansen, CMCC, Italy: Drift simulation of MH370 debris using superensemble techniques (OYSA)

11.00 - 11.30
Coffee Break

11.30 - 12.00
KEYNOTE PRESENTATION: G. Mannarini; Centro Euro Mediterraneo sui Cambiamenti Climatici, Lecce, Italy
VISIR: an open-source model and an operational system for Ship Route optimization

12.00 - 13.00
Presentation of prizes and awards
Discussion IWMO 2017
End of the Meeting
8th International Workshop on Modeling the Ocean (IWMO)

Poster Presentations

- Yuwu Jiang, Xinyou Lin, Xiamen University, Xiamen, China: Performance Assessment for an Operational Ocean Model of the Taiwan Strait

- A. Cieszyńska, IOPAN, Sopot, Poland: Numerical study on the response of phytoplankton dynamics to various atmospheric forcing in the Baltic Sea

- Yu-Kun Qian, South China Sea Institute of Oceanology, CAS, Guangzhou, China: Impacts of eddy-mean flow decomposition on Lagrangian statistics in a barotropic double-gyre model

- Yineng Li, South China Sea Institute of Oceanology, Chinese Academy of Sciences, Guangzhou, China: The factors of seasonal and interannual variation of upwelling in the West and Southwest off Hainan island

- A. Dudkowska, University of Gdańsk, Gdańsk, Poland: Comparison of some well-known sediment transport models

- A. Cucco, CNR/IAMC, Italy: Hydrodynamic modeling of coastal seas: the role of tidal dynamics in the Messina Strait, Western Mediterranean Sea

- Yongzhi Wang, SOA, China: Effect of the current shear front on the suspended particulate matters transport off eastern Shandong Peninsula

- Young Jae Ro, College of Natural Sciences, Chungnam Natl. University, S. Korea: Impact of the Sumjin River Runoff to the connected the Kwangyang and Kangjin Estuarine System, South Sea, Korea
• Xiaomei Ji (1), Jinyu Sheng(2), (1)Hohai University (2)Dalhousie University: Numerical Study of Seasonal Circulation and Variability in the Abandoned Yellow River Estuary and Adjacent Coastal Waters

• Kenfack S.C., University of Dschang, Dschang, Cameroon: Ability of a subset of CMIP5 to reproduce the sea surface temperature of tropical Atlantic

• Lulu Qiao, Ocean University of China, Qingdao, China: Response of tidal shear front to wind and its effect on suspended sediment transport in the Yellow River Delta

• P. De Ruggiero, University of Naples “Parthenope”, Napoli, Italy: A modelling study of the Antarctic Circumpolar Current dynamics in the Southern Ocean sector south of Australia and New Zealand, including the Ross Sea (OYSA)

• D. Di Luccio, University of Naples “Parthenope”, Napoli, Italy: Operational modeling issues in extreme weather coastal flooding

• R. Montella, University of Naples “Parthenope”, Napoli, Italy: FairWind: a marine data crowdsourcing platform based on Internet of Things and mobile/cloud computing technologies.

• R. Montella, University of Naples “Parthenope”, Napoli, Italy: WaComM: a hierarchically parallel lagrangian Water quality Community Model integrated in a workflow data science portal

• V. Di Biagio, OGS, Trieste, Italy: Tackling extreme bloom events in the Mediterranean Sea with the MITgcm-BFM numerical modelm (OYSA)

• Xiao Yi Yang, Xiamen University, Xiamen, China: Decadal change of Antarctic Intermediate Water in the region of Brazil and Malvinas confluence.

• Chen Zhaozhang, Xiamen University, Xiamen, China: Establish a 2D hydrodynamic and mass transports model based on the SHYFEM

• Zhu Jia, Xiamen University, Xiamen, China: Tide-and wind-driven variability of water level in Sansha Bay, Fujian, China

• S.A. Ciliberti, CMCC, Lecce, Italy: A regional ocean model for the Black Sea within the frame of the Copernicus Marine Environment and Monitoring Service. (OYSA)

• Wei Zhuang, Xiamen University, China: Characteristics of mesoscale eddies in the Subtropical Southeast Indian Ocean

• Jingsong GUO, First Institute of Oceanography, SOA, China: Reversal process of the South China Sea western boundary current in autumn 2011
• Zhida Huang (1), Hailong Liu (2), Pengfei Lin (2), Jianyu Hu (1),
(1) Xiamen University, China; (2) Chinese Academy of Sciences, Beijing, China
*Roles of island chains on the Kuroshio intrusion in the Luzon Strait*

• Biao Zhao, First Institute of Oceanography (FIO) under State Oceanic Administration (SOA),
China: *The sensitivity of typhoon forecasting to surface wave and rainfall*

• Q.F. Zhu (1), Y.W. Jiang (1), Z.W. Wan(2), Onyx W.H. Wai(3),
(1)Xiamen University, China; (2)Danish Meteorological Institute, Denmark;(3) Hong Kong Polytechnic University ,China
*Three-Dimensional Hydrodynamics, Sediment and Water Quality Model for Estuaries*