



## 8th International Workshop on Modeling the Ocean (IWMO)

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

Secretariat support:

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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 <i>Reconstructing the past ocean variability from reanalyses</i>
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 Tyrrhenian 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)*



- A. Cipollone, CMCC, Italy: *Towards a fully operational eddying Global Forecasting System (GOFs16) (OYSA)*
- Do-Seong Byun, Korea Hydrographic and Oceanographic Agency, Korea: *Investigating tidal harmonic prediction approaches used in coastal numerical forecasting models and software*
- N. Pinardi, University of Bologna, Italy: *Ocean Ensemble Forecasting: Two Applications using Ensemble Winds from a Bayesian Hierarchical Model*

17.15 - 18.00

Poster session and Cocktail

**June 9, 2016**

09.00- 10.15

Waves, currents and turbulence (Chairperson N. Pinardi)

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



- 10.15 - 10.45 KEYNOTE PRESENTATION: G. L. Mellor; Princeton University, USA  
*On Theories Dealing with the Interaction of Surface Waves and Ocean Circulation*
- 10.45 - 11.15 Historical Oceanography Society (HOS) Award Session: G.M.R. Manzella,  
N. Pinardi, M. Zavatarelli.  
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

13.30

End of the Meeting





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## 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*

