LATEST

MODELLING TECHNIQUES

FOR SHALLOW SEAS

OCTOBER 17 - 19 JONSMOD 2018

JONSMOD means Joint Numerical Sea Modelling Group and started in 1981. The general theme of JONSMOD conference is 'Latest modeling techniques for shallow seas'. JONSMOD biannual conferences allow informal discussions and exchange alongside presentations. The conference aims to provide a friendly atmosphere to young scientists who wish to present their work to a qualified audience.

MAIN TOPICS

- *Modelling of physical processes in shallow waters and regional oceans important for circulation, hydrography, regional ocean climate, waves, sediment transport, and ecological processes*

- *Numerical methods including the use of structured and unstructured grid techniques;*

- *Data assimilation techniques*

- *Nesting techniques and open boundary conditions*

- *Needs and use of remote sensing data*

VENUES AND INFO

Accademia dei Georgofili
Logge degli Uffizi Corti - Firenze

jonsmod2018@lamma.rete.toscana.it

in collaboration with:

ACCADEMIA DEI GEORGOFILI

JONSMOD2018

WEDNESDAY 17 OCTOBER

09:00 – 09:30   Registration
09:30 – 10:00   Welcome

SESSION 1

10:00 - 10:40

INVITED SPEAKER

The State-of-the-art in modelling the Mediterranean-Black Sea system

G. Sannino

Climate Modeling Lab, ENEA, SSPT-MET, CR Casaccia, Rome, Italy

10:40 - 11:00

Surface Lagrangian Coherent Structures in the Gulf of Trieste

F. Enrile, G. Besio, A. Stocchino, M.G. Magaldi, C. Mantovani, S. Cosoli, R. Gerin, P.M. Poulain

1) DICCA, Dipartimento di Ing.Civile, Chimica e Ambientale, Università di Genova, Genova, Italy
2) CNR-ISMAR, Institute of Marine Sciences, Lerici, La Spezia, Italy
3) Johns Hopkins University, Earth and Planetary Sciences, Baltimore, MD, USA
4) OGS, National Institute of Oceanography and Applied Geophysics, Trieste, Italy

11:00 - 11:20   COFFEE BREAK

11:20 - 11:40

Global modelling of future extreme sea-levels using a high-resolution Global Tide and Surge Model

M. I. Apecechea, M. Verlaan, S. Muis, J. de Lima Rego

1) Deltares, Delft, Netherlands
2) TU Delft, Delft, Netherlands
3) Vrije Universiteit, Amsterdam, Netherlands

11:40 - 12:00

Assessment of estuarine plume in a coastal area using high-resolution model. The Tagus mouth case

H. de Pablo, J. Sobrinho, R. Neves

Maretec, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

12:00 - 12:20

Local time parameters use in tropical bays: Understanding of coastal hydrodynamic responses to natural and anthropic physical forcings

M. Drouzy, P. Douillet, C. Pinazo, J. M. Fernandez

1) Analytical and Environmetal Laboratory (AEL), Institut de Recherche pour le Développement (IRD)-Nouméa, Nouméa, Nouvelle-Calédonie
2) Mediterranean Institute of Oceanography (MIO), Unité Mixte de Recherche, CNRS/Institut National des Sciences de l'Univers (INSU), Aix Marseille Université, Université de Toulon, Marseille, France

12:20 - 12:40

Calibration of a coupled flow-wave model for Tuscany coastal areas

V. Vannucchi, B. Doronzo, S. Taddei, L. Costanza, C. Brandini

1) Consorzio LaMMA, Sesto Fiorentino, Firenze, Italy
2) CNR-IBIMET Institute of biometeorology, Firenze, Italy

12:40 - 13:00

Application of risk based flood forecasting in the coastal urban area of Manila Bay, Philippines to support short term decision making processes

R. Schotten, D. Bachmann , D. Twigt, T. Bogaard

Deltares, Delft, Nehterlands

13:00 - 14:20   LIGHT LUNCH

SESSION 2

14:20 - 14:40

Looking for indicators to qualify the coastal area dispersion capability
S. Petton, S. Pouvreau, F. Dumas
1) PFOM lab Ifremer, Argenton en Landunvez., France
2) Shom, Research department, Brest, France

14:40 - 15:00

An adaptable modelling approach to the management of toxic microalgal bloom events in coastal areas
V. Asnaghi, D. Pecorino, Ottaviani E., Pedroncini A., Bertolotto R., Chiantore M.
1) DHI Group, Marine Department
2) Università di Genova – Dipartimento DISTAV

15:00 - 15:20

Oil Spill cases in Ligurian Sea
M. Quagliati, S. Magrìa, P. De Gaetano
ARPAL – UTCR, Genova, Italy

15:20 - 15:40

Merging observations and numerical model for Marine Litter distribution in the North-Western Mediterranean Sea

C. Brandini, S. Taddei, M. Fattorini, B. Doronzo, C. Lapucci, F. Galgani
1) Consorzio LaMMA, Sesto Fiorentino, Firenze, Italy
2) CNR-IBIMET, Institute of Biometeorology, Firenze, Italy
3) Station de Corse - IFREMER, Bastia, France

15:40 - 16:00 COFFEE BREAK

16:00 - 16:20

Applications of the Oslofjord model
K. Hjelmervik, N. M. Kristensen
1) University of Southeast Norway, Kongsberg, Norway
2) Norwegian Meteorological Institute, Oslo, Norway

16:20 - 16:40

Recent improvements of the Oslofjord model
N. M. Kristensen, A. Staalstrøm, K. Hjelmervik
1) Norwegian Meteorological Institute, Oslo, Norway
2) NIVA, Oslo, Norway
3) University of Southeast Norway, Kongsberg, Norway

18:00 - 20:00 ICEBREAKER: DRINKS AND SNACKS AT A BAR CLOSEBY

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THURSDAY 18 OCTOBER

SESSION 3

09.15 - 10:00

INVITED SPEAKER
The role of numerical modeling in coastal zone management
G. Umgiesser
CNR-ISMAR, Institute of Marine Sciences - Arsenale, Venezia, Italy

10:00 - 10:20

Fifty years of shallow flow modelling in The Netherlands and the transition from structured to unstructured grid modelling
E. de Goede
Deltares, Delft, Netherland

10:20 - 10:40

Advances in the CROCO project
P. Marchesiello, F. Auclair, R. Benshila, L. Bordois, X. Capet, L. Debreu, F. Dumas, S. Jullien
1) IRD - LEGOS, Toulouse, France
2) Univ. Toulouse - LA, Toulouse, France
3) CNRS - LEGOS, Toulouse, France
4) SHOM, Brest, France
5) CNRS - LOCEAN, Paris, France
6) INRIA - LJK, Grenoble, France
7) IFREMER - LOPS, Plouzané, France

10:40 - 11:00

11:00 - 11:20 COFFEE BREAK

11:20 - 11:40

Evaluation of the performance of the new coupled wave-ocean forecasting model for the Adriatic Sea at Arpae-SIMC, Emilia-Romagna, Italy
L. Bressan, A. Valentini, T. Paccagnella
Agency for environmental protection and energy in Emilia-Romagna, Hydro-Meteo-Climate service (Arpae-SIMC), Bologna, Italy

11:40 - 12:00

A North Sea-Baltic Sea regional model: coupling of ocean and atmosphere through a dynamic wave interface
J. Staneva, C. Schrum, J. Schulz-Stellenfleth, GCOAST team
Helmholtz-Zentrum Geesthacht (HZG), Institute of Coastal Research, Geesthacht, Germany

12:00 - 12:20

Modelling Wave-Current Interaction in the Lofoten Maelstrom
Ø. Saetra, A. Carrasco, T. Halsne
The Norwegian Meteorological Institute (MET Norway), Oslo, Norway

12:20 - 12:40

Two-way nesting technique applied on MOHID modelling system
J. Sobrinho, L. Pinto, R. Neves
Maretec – Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal

12:40 - 13:00

A high-resolution, tide-including model of the Mediterranean Sea-Black Sea system
M. Palma, R. Iacono, A. Bargagli, A. Carillo, E. Lombardi, E. Napolitano, G. Pisacane, G. Sannino, M. V. Struglia
ENEA, C.R. Casaccia, SSPT-MET-CLIM, Roma, Italy

13:00 - 14:20   LIGHT LUNCH

SESSION 4

14:20 - 14:40

Seamless and cross-scale modelling of the ocean: from regional to shelf-coastal and harbour scale

I. Federico, I. Barletta, S. Causio, F. Montagna, G. Verri, R. Lecci, G. Coppini, N. Pinardi
1) Ocean Predictions and Applications, Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC), Lecce, Italy
2) Department of Physics and Astronomy, University of Bologna, Bologna, Italy

14:40 - 15:00

Improvements in turbulence model realisability for enhanced stability of ocean forecast and its importance for downstream components

T. Brüning
Federal Maritime and Hydrographic Agency (BSH), Hamburg, Germany

15:00 - 15:20

A multi-scale strategy towards numerical simulation of coastal erosion

A. Mariotti, F. Beux, M.V. Salvetti
1) Dip.to di Ingegneria Civile e Industriale, Università di Pisa, Pisa, Italy
2) Sardegna Progetta Società Cooperativa, Cagliari, Italy

15:20 - 15:40

Tidal Modulations of Surface Gravity Waves in the Gulf of Maine

P. Wang, J. Sheng
Department of Oceanography, Dalhousie University, Halifax, Nova Scotia, Canada

15:40 - 16:00

Modelled diurnal oscillations propagating around Saint Pierre and Miquelon

M. Bezaud, P. Lazure, B. Le Cann
Laboratoire d'Oceanographie Physique et Spatial, Plouzané, Brest, France

16:00 - 16:20   COFFEE BREAK

16:20 - 16:40

Rapid decline in tidal amplitude along the Dutch coast since 2007

F. Zijl, S. Muis, M. Verlaan, P. Herman
1) Deltares, Delft, Netherlands
2) Vrije Universiteit, Amsterdam, Netherlands
3) TU Delft, Delft, Netherlands

16:40 - 17:00

High resolution numerical analysis of bathing water hydrodynamics around the Adige River mouth (Northern Adriatic Sea)

E. Coraci, A. Bruschi, R. De Angelis, C. Silvestri, S. Querin, G. Cossarini, M. Ferla, F. Lalli
1) ISPRA, Italian National Institute for Environmental Protection and Research, Roma, Italy
2) OGS, National Institute of Oceanography and Applied Geophysics, Sgonico, Trieste, Italy

20:00   SOCIAL DINNER

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FRIDAY 19 OCTOBER

SESSION 5

09:15 - 10:00

INVITED SPEAKER

3D variational assimilation of satellite and in situ observations in the Copernicus Services

N. Pinardi

University of Bologna, Department of Physics and Astronomy, Bologna, Italy

10:00 - 10:20

The Mediterranean analysis and forecasting physical system for the Copernicus Marine Service: description and skill assessment

E. Clementi, J. Pistoia, M. Drudi, A. Grandi, S. Masina, S. Ciliberti, G. Coppini, D. Delrosso, G. Mattia, C. Fratianni, N. Pinardi

1) CMCC, Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy
2) Department of Physics and Astronomy, University of Bologna, Bologna, Italy
3) Istituto Nazionale di Geofisica e Vulcanologia, Bologna, Italy

10:20 - 10:40

4DVAR assimilation of surface current and water level measurements in a 3D barotropic circulation model of the German Bight

J. Schulz-Stellenfleth, J. Staneva, J. Horstmann, S. Maßmann, T. Brüning

1) Helmholtz-Zentrum Geesthacht (HZG), Institute of Coastal Research, Geesthacht, Germany
2) Federal Maritime and Hydrographic Agency (BSH), Hamburg, Germany

10:40 - 11:00

Integration of the Italian water quality dataset and a model downscaling of the Mediterranean CMEMS: the CADEAU coastal service

S. Querin, G. Bolzon, G. Cossarini, V. Di Biagio, S. Salon, C. Solidoro, A. Teruzzi

OGS, National Institute of Oceanography and Applied Geophysics, Trieste, Italy

11:00 - 11:20   COFFEE BREAK

11:20 - 11:40

On the computation of LAT-grids

M. Verlaan, M. Irazoqui Apecechea, C. Slobbe, S. Gaytan Aguilar, F. Zijl
1) Deltares, Delft, Netherlands
2) TU Delft, Delft, Netherlands

11:40 - 12:00

Singular value decomposition, correlations and observations impact to optimize an in-situ observation network

M. Fattorini, C. Brandini
1) Consorzio LaMMA, Sesto Fiorentino, Firenze, Italy
2) CNR-IBIMET, Institute of biometeorology, Firenze, Italy

12:00 - 12:20

Adaptive Ensemble Optimal Interpolation for efficient data assimilation in the Red Sea

H.T.M. Kele, P. Zhan, F. Sana, I. Hoteit
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

12:20 - 12:40

Bayesian Inference of Spatially-Varying Manning's n Coefficients in the Coastal Ocean Using a Generalized Karhunen–Loève Expansion and Polynomial Chaos

A. Siripatana, O. Le Maître, O. Knio, C. Dawson, I. Hoteit

1) Div.of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
2) Lab.d'Informatique pour la Mécanique et Sciences de l'Ingénieur, LIMSI-CNRS Campus Universitaire, Paris, France
3) Division of Computer, Electrical and Mathematical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabiad
4) The Institute for Computational Engineering and Sciences, University of Texas, Austin, USA

12:40 - 13:00   CLOSING REMARKS