Preliminary Agenda of the 5^{th} International Workshop on Modeling the Ocean IWMO 2013

17-20, 2013, Bergen, Norway

Venue and Registration

Venue: Auditorium 1 in the entrance floor of the Science Building at the University of Bergen. (250 seats)
Registration: Sunday 16. June 18:00-20:00 Early registration
Registration: Monday 17. June 07.30-08.30 Registration

Monday 17. June

08.30-09.00 Opening remarks
09.00-09.30 Keynote Lecture: **George Mellor**, Surface Boundary Layers and Gravity Waves

09.30-09.50 Coffee break

Session 1: Surface waves, the parameterisation of wind stress and their effect on ocean circulation
Session Chairs: Richard Greatbatch and Alastair Jenkins

09.50-10.05 **Igor Esau**, Simulations of turbulent air-sea interaction with a coupled atmosphere-ocean turbulence-resolving model PALM

10.10-10.25 **Jun Wei**, Xin Liu and Paola Malanotte-Rizzolik, Revisit Tropical Cyclone Ocean Interaction Using a Regional Air-Sea Coupled Model

10.30-10.45 Hidenori Aiki and **Richard J. Greatbatch**, A new expression for the form stress term in the vertically Lagrangian mean framework for the effect of surface waves on the upper ocean circulation: implications for the surface stress implemented in models

10.50-11.05 **Hidenori Aiki**, R.J. Greatbatch, H. Tamura, M. Yoshioka, K. Tsukobi, Momentum fluxes to ocean circulation as given by the dissipation rate of surface gravity waves under tropical cyclone conditions

11.10-11.25 **Alastair D. Jenkins**, Angus Graham, Helge Avlesen, Alok K. Gupta1, Torge Lorenz, IdarBarstad, yvind Thiem, Ilker Fer and Mostafa Bakhoday Paskyabi, Responding to the challenges involved in coupling pre-existing numerical models for the atmosphere, ocean waves and ocean hydrodynamics, for shelf sea and coastal/fjord applications

Session 2: Circulation and Dynamics in Shelf Seas
Session Chairs: Jianping Gan and Bjørn Ådlandsvik

11.30-11.45 **Pham Xuan Duong**, Modeling current system in the south Viet Nam - Gulf of Thailand in northeast season and southwest season

11.50-12.05 **Danya Xu** and Paola Malanotte-Rizzoli, OYSA, Numerical Modeling the Seasonal Variation of the Upper Layers of the South China Sea (SCS) circulation and the Indonesian Throughflow (ITF)

12.10-13.30 Lunch Break

13.30-13.45 **Shuwen Zhang**, Lingling Xie, Yijun Hou, Tropical storm-forced near-inertial energy dissipation in the continental shelf region of Hainan Island

13.50-14.05 **Juan-Manuel Sayol**, Alejandro Orfila, Gonzalo Simarro, Daniel Conti, Alvaro Galan and Lionel Renault, OYSA, Western Mediterranean Sea surface characterization. A Lagrangian perspective

14.10-14.25 **Sourav Sil**, Yasumasa Miyazawa, Sergey M. Varlamov, Toru Miyama, Takuji Waseda, and Xinyu Guo, OYSA, Topography-tide-current interaction on the South of the Japan

14.30-14.45 **F. A. Velazquez-Munoz**, Numerical study of coastal circulation by offshore wind-stress jet in the Gulf of Tehuantepec, Mexico

14.50-15.05 **Valerie Garnier**, Pierre GARREAU and Delphine Fernandez-Bruyere, Impact of the high resolution modelling onto the dynamics of the North Western Mediterranean Sea

15.10-15.30 Coffee break

15.30-15.45 **T.S.Anandh**, Saswati Deb and Arun Chakraborty, OYSA, Mechanisms of Eddy Formation along Western Boundary of the Bay of Bengal

15.50-16.05 **Bjørn Ådlandsvik**, Jon Albretsen, Anne D. Sandvik and Lars Asplin, An ocean model system for the Norwegian Coast

16.10-16.25 **Clare Coughlan**, Adolf Stips, Johan van der Molen, Interannual variability in temperature and salinity across the northwest European Shelf

16.30-16.45 **Jianping Gan**, Cross-isobath geostrophic transport in the shelf sea

19.00 Reception at the Institute of Marine Research

Tuesday 18. June

Session 3: Numerical techniques, data assimilation and forecast systems
Session Chair: Jinyu Sheng

08.30-08.45 **Nguyen Tan Duoc**, OYSA, A development of POM model to simulate Tsunami propagation in South China Sea

08.50-09.05 **Shouxian Zhu**, Wenjing Zhang, Yancheng Wu and Lin Zhou, The improvement of POM by Eulerian-Lagrangian method with Hybrid N-order Lagrangian interpolation

09.10-09.25 **Sergey M. Varlamov**, Yasumasa Miyazawa, Xinyu Guo and Toru Miyama, Validation of Updated Level 2.5 Mellor-Yamada Ocean Mixing Model in Operations of JCOPE-T Regional Ocean Modeling System

09.30-09.45 Wang Qiang, **Weidong Zhou**, Dongxiao Wang, Several New Time Integration Schemes for Implementation in POM

09.50-10.05 **Tarumay Ghoshal**, Arun Chakraborty, OYSA, Development of High Resolution Synoptic Surface parameters for short-term ocean state forecasting of the Bay of Bengal using ROMS

10.10-10.30 Coffee break

10.30-10.45 **Laurent Bertino**, Franois Counillon, Pavel Sakov, Sylvain Bouillon, Tim Williams, Modeling and data assimilation developments of the TOPAZ system in support of operational oceanography in the Arctic

10.50-11.05 **Annette Samuelsen**, Cecilie Hansen, Laurent Bertino, Environmental forecasting with the TOPAZ forecasting system

11.10-11.25 **Xunqiang Yin**, Fangli Qiao and Wei Zhao, New developments on parallel computation of Princeton Ocean Model based on MPI

11.30-11.45 Jorge Urrego-Blanco and **Jinyu Sheng**, Assessment of one-way and two-way nesting techniques in a coupled ocean-ice circulation model for the eastern Canadian Shelf

11.50-13.10 Lunch Break

Session 4: Analysis methods for oceanic observations, satellite data, and model simulations
Session Chair: Tal Ezer

13.10-13.25 **Karina Hjelmervik** and Karl Thomas Hjelmervik, Estimating time-calibrated 3D climatology for ocean model validation

13.30-13.45 **Tal Ezer**, Using EMD/HHT Analysis to Connect Coastal Sea Level Rise with Ocean Dynamics and Climate Change

13.50-14.05 **Pierre De Mey**, Matthieu Le Henaff, Julien Lamouroux, Guillaume Charria, Franck Dumas, Nadia Ayoub, Array testing and impact of observations in the coastal ocean by ensemble methods

14.10-14.25 **Nataliya Stashchuk**, Vasiliy Vlasenko, Mark Inall, Dye release experiment: in-situ measurements and modelling

14.30-14.45 **Stefan Kraatz**, OYSA, A hydrodynamic model of the Black Sea- Azov Sea using adaptive vertical coordinates

14.50-15.10 Coffee break

15.10-15.25 Michela De Dominicis, **Silvia Falchetti**, Francesco Trotta, Nadia Pinardi, A Relocatable Ocean Model for simulating drifter trajectories

15.30-15.45 **Lars Petter Røed**, Arne Melsom, Laurent Bertino, Magne Simonsen, Francois Counillon, Bruce Hackett, How good are the products generated by the MyOcean Arctic Monitoring and Forecasting System?

15.50-16.05 **Lars Petter Røed**, Nils Melsom Kristensen, Pål Erik Isachsen, Øyvind Sætra, The triply nested Norwegian numerical ocean weather prediction system: Problems and possible solutions

16.10-16.25 **Jon Bergh**, Timothy Williams, Francois Coullion, A sea ice forecast system in the Barents and Kara Seas including a newly developed marginal ice zone model

16.30-16.45 Qiang Wang, **Weidong Zhou**, Theoretic analysis of splitting errors in split time stepping of ocean modeling

Session 5: Modelling and Prediction of Marine Extreme Events
Session Chair: Jinyu Sheng

16.50-17.05 **Tsimplis M.N.**, R. Torres, Xiangbo Feng, Changes of the sea level extremes at marginal seas

17.10-17.25 **Feng Xiangbo**, M. N. Tsimplis, M. Yelland and G. Quartly, Significant and maximum wave heights in the Northeastern Atlantic and their relationships to the NAO

Evening Free

Wednesday 19. June

Session 5 cont.: Modelling and Prediction of Marine Extreme Events
Session Chair: Jinyu Sheng

08.30-08.45 **Liping Yin**, Fangli Qiao, Quanan Zheng, OYSA, A dynamic exceptional cold water event around Penghu on February 2008 and 2011

08.50-09.05 **Kuo-Tung Chang**, Shu-Huei Li, Three-Dimensional Evolutions of Tsunami on a Sloping Beach

09.10-09.25 **Heng Zhang**, Jinyu Sheng, Estimation of Extreme Sea Levels over the Continential Shelf off Eastern North America

09.30-09.45 **Ryota Wada**, Takuji Waseda, OYSA, LIKELIHOOD-WEIGHTED METHOD FOR EXTREME WAVE HEIGHT ESTIMATION

09.50-10.05 **Lian Xie**, Bin Liu, Huiqing Liu, and Xiaoping Zhang, High Impact Storm Surges Affecting US Southeast Coast

10.10-10.30 Coffee break

Session 6: Ocean circulation and its scale interactions with various other phenomena
Session Chairs: Yasumasa Miyazawa and Leo Oey

10.30-10.45 **Alan Cuthbertson**, Peter Davies, Vasiliy Vlasenko and Nataliya Stashchuk, Modelling Studies of Topographically-Constrained Deep Water Overflows within the Faroese Channels

10.50-11.05 **Björn C. Backeberg**, Francois Counillon and Johnny A. Johannessen, Sensitivity experiments in the Agulhas Current using a hybrid framework

11.10-11.25 **Y.-L. Eda Chang** and L.-Y. Oey, Instability and finite-amplitude evolution of STCC eddies, from model and satellite data

11.30-11.45 **Toru Miyama**, Yasumasa Miyazawa and Humio Mitsudera, Short-term variations of the Kuroshio downstream of Cape Shionomisaki

11.50-12.05 **Bert Viikmae** and Tomas Torsvik, OYSA, Analysis of the lifetime of eddy structures

12.10-12.25 **Jonathan Tinker**, Jason Lowe, Anne Pardaens, Jason Holt, Sarah Wakelin, Rosa Barciela, Climate Projections for the NW European Shelf Seas with a quantification of uncertainty

12.30-13.50 Lunch Break

13.50-14.05 **H. R Langehaug**, P. B. Rhines, T. Eldevik, K. Lohmann, J. Mignot, OYSA, Water mass transformation and the North Atlantic Current in three multi-century climate model simulations

14.10-14.25 **Ying Bao**, Fangli Qiao, Zhenya Song, The global carbon cycle simulation of FIO-ESM v1.0

Session 7: Oceanic internal waves: Theoretical modelling and observational evidence
Session Chair: Vasyl Vlasenko

14.30-14.45 **Vasiliy Vlasenko**, Nataliya Stashchuk, Mark Inall, Matthew Palmer, Modelling of baroclinic tides over an isolated underwater bank

14.50-15.05 **Yasumasa Miyazawa**, Xinyu Guo, Kaoru Ichikawa, Toru Miyama, Sergey M. Varlamov, Takuji Waseda, Sourav Sil, Internal tide variability south of Japan: modeling and observation

15.10-15.25 **Tsubasa Kodaira** and Takuji Waseda, OYSA, Numerical analysis of oceanic internal solitary wave generation around an island in stratified shear flow

15.30-15.50 Coffee break

Session 8: Coastal and Estuarine Dynamics
Session Chairs: Xiao Hua Wang and Jarle Berntsen

15.50-16.05 **Xiao Hua Wang**, The effects of tidal flat reclamation on tidal dynamics and sediment transport in the muddy coasts

16.10-16.25 **Saswati Deb** and Arun Chakraborty, OYSA, Effect of Sediment Transport on the Productivity of Hooghly Estuary using High Resolution Biogeochemical Model

16.30-16.45 **Jing Lu**, F.L. Qiao, X.H. Wang, Y. Teng, K. T. Jung and Y.G. Liu, OYSA, Modeling the Yellow River sediment flux, deposition patterns and their monthly variability

16.50-17.05 **Giorgia Verri**, Stefania Ciliberti, Paolo Oddo and Nadia Pinardi, The sensitivity of coastal circulation to river discharge in the central Mediterranean Sea

17.10-17.25 **Olivier Gourgue**, Anouk de Brauwere, Eric Deleersnijder and Marc Elskens, A first attempt to predict trace metal concentrations in the Scheldt Estuary with a twodimensional depth-averaged sediment model

19.00 Dinner/reception at ....

Thursday 20. June

Session 8 continued: Coastal and Estuarine Dynamics
Session Chairs: Xiao Hua Wang and Jarle Berntsen

08.30-08.45 **Karina Hjelmervik**, Birgit Kjoss Lynge and Bjørn Gjevik, Modelling of tides and storm surges in Tjeldsund channel

08.50-09.05 **Xinyu Guo**, Xiaojie Yu and Hidetaka Takeoka, Fortnightly Variations of Tidal Fronts, Bottom Cold Water and Estuarine Circulation

09.10-09.25 **Shiliang Shan**, Jinyu Sheng, and Blair J.W. Greenan, OYSA, Physical Processes Affecting Circulation and Hydrography in the Sable Gully of Nova Scotia

09.30-09.45 **Li-Feng Lu**, Keiko Takahashi, A numerical study on the SST variation in Tokyo Bay

09.50-10.10 Coffee break

Session 9: Coupled bio-physical ocean models
Session Chairs: Huijie Xue and Corinna Schrum

10.10-10.25 Yuan Wang, **Huijie Xue**, Fei Chai, A model study of the Copper River plume and its effect on the northern Gulf of Alaska

10.30-10.45 **Ute Daewel**, Corinna Schrum, Multi-decadal simulation of Atlantic cod (Gadus morhua) early life stages in the North Sea: on the potential of spatially-explicit IBMs to be usedinecosystem based management

10.50-11.05 Pengfei Lin, **Fei Chai**, Huijie Xue, Peng Xiu, Modulation of Decadal Oscillation on Marine Ecosystems in the Kuroshio Extension

11.10-11.25 **Rune Rosland**, Marco Castellani, Øyvind Fiksen, A mass-balanced pelagic ecosystem model with size-structured behaviourally adaptive zooplankton and fish

11.30-11.45 **Dhanya Pushpadas**, Corinna Schrum, Ute Daewel, Assessing climate change impacts on North Sea and Baltic Sea ecosystems through ensemble simulations forced by IPCC AR and IPCC AR5 models under different scenarios

11.50-12.05 **Corinna Schrum**, Johannes Bieser, Ute Daewel, Evgeniy Yakushev, Modelling the fate and transport of pollutants in the marine environment - A Case study application of the ECOSMO model system for mercury

12.10-13.20 Lunch break

13.20-14.20 Discussion-IWMO 2014

Poster session

1. **Herbert Gaëlle**, Pierre Garreau, Franck Dumas, Valrie Garnier, Downscaling from Oceanic Global Circulation Model towards Regional and Coastal Model using spectral nudging techniques

2. Jarle Berntsen, Elin Darelius and **Helge Avlesen**, Mixing in lock release gravity currents down canyons

3. **Valentin Vallaeys**, Jonathan Lambrechts, Emmanuel Hanert and Eric Deleersnijder, A finite-element, multi-scale model of the Congo River, Estuary and ROFI

4. **Lulu Qiao**, Yongzhi Wang, Fei Gao, Numerical study on sedimentary dynamic processes of the Yellow Sea Warm Current

5. **Mostafa Bakhoday Paskyabi**, Interaction between Acoustic Field and Surface Gravity Waves in the Presence of a Large Offshore Wind Farm

6. **Ricardo de Camargo**, Hindcasting 20th century in the South Atlantic for storm surges identification and analysis

7. Yvonne Gusdal, **Vidar S. Lien**, Frode B. Vikebø and Arne Melsom, A 50-year model hindcast of the Nordic, Barents and Kara seas: physical basis for biological applications

8. **Kai H. Christensen**, Wave/mean flow-interactions in ocean models with time varying vertical coordinates

9. **Chuncheng Guo**, Vasiliy Vlasenko, The effect of rotation on shoaling of large amplitude internal solitary waves in the northern South China Sea

10. **Changshui Xia**, Fangli Qiao, Yongzeng Yang and Yeli Yuan, Simulation of the Yellow Sea Warm Current using a wave-tide-circulation coupled model

11. **Wenjing Zhang**, Shouxian Zhu and Xunqiang Li, The impact of tide induced residual current on the low-salinity water lens in the northeast out of the Changjiang river mouth

12. **Feng XU**, Yu ZHANG, Su-wen ZHANG, Ke-xin HUANG, Ling-yue Zeng, Analysis and Research on Characteristic of Sea-Land Breeze over Donghai Island of Zhanjiang,China

13. **CHEN Shengli**, HU Jianyu, Jeff A. POLTON, ZHENG Quanan, SUN Zhenyu, Some observed features of near-inertial motions on the shelf of northern South China Sea

14. **H. Namaoui**, Analysis methods for oceanic observations, satellite data, and model simulations

15. **L.-Y Oey**, Y.-L. Chang, Y.-C. Lin, M.-C. Chang, S. Varlamov and Y. Miyazawa, Currents in Taiwan Strait under winter-spring relaxing northeasterly wind conditions

16. **Chris Chambers**, Gary Brassington, Ian Simmonds, and Kevin Walsh, Upper Ocean Heat Influence on Australian East Coast Cyclone Thunderstorms