

# The 9th International Workshop on Modeling the Ocean

Date: 3 – 6 July 2017 (Yonsei University, Seoul, Korea)

## Oral Presentations

03 July 2017 Monday		
8:30-9:00	Registration	
9:00-9:30	Welcome	
<b>Climate dynamics and modeling I (Session Chair : L. Oey)</b>		
9:30-10:00	Oceanic Mesoscale vs. Submesoscale Variability: Dynamics and Observability (invited)	Bo Qiu (U. Hawaii, U.S.A)
10:00-10:20	Long-term trends of typhoon-induced rainfall over Taiwan: in situ evidence of poleward shift of typhoons in western North Pacific in recent decades	L. Oey (NCU, Taiwan)
10:20-10:40	Climate variability responsible for poor recruitment of the Japanese eel	C. R. Wu (NTNU, Taiwan)
10:40-11:00	Sensitivity of ITF Transport to Model Bathymetry and Smoothing: Lessons learned from a Regional Pacific-Indian Ocean Model	L. Liang (SCSIO, China)
11:00-11:20	Reducing SST warm bias in eastern boundary upwelling systems in the medium-low resolution climate models (OYSA)	J. Ma (Tsinghua U., China)
11:20-13:00	Lunch	
<b>Climate dynamics and modeling II (Session Chair : B. Qiu)</b>		
13:00-13:20	Role of ocean dynamics in driving the asymmetrical feature of El Niño and La Niña	S. I. An (Yonsei U., Korea)
13:20-13:40	Weather noise leading to El Niño diversity in an ocean general circulation model	S. W. Yeh (Hanyang U., Korea)
13:40-14:00	Interannual-to-Decadal Variability and Trends of Oceanic Barrier Layers in the Tropical Pacific (OYSA)	L. Wang (Tsinghua U., China)
-	Modeling seasonal and interannual variability of Great Lakes ice cover using FVCOM+ice model (cancelled)	J. Wang (NOAA, U.S.A)
14:00-14:20	Bayesian Projections of Atlantic Overturning with Thorough Accounting for Relevant Uncertainties (OYSA)	R. Olson (Yonsei U., Korea)

14:20-14:40	Impacts of the Southern Hemisphere westerly winds on the sea-ice/ocean interaction and global ocean circulation	W. G. Cheon (ADD, Korea)
14:40-15:00	Coffee Break	
<b>Coastal modeling I (Session Chair : H. Xue)</b>		
15:00-15:30	Responses of estuaries to human interventions: A brief story of recent coastal development where things have gone right and wrong (invited)	X. H. Wang (UNSW, Australia)
15:30-15:50	Bottom Intrusion to the Bungo Channel in a high-resolution ocean data assimilation data: JCOPE-T-NEDO	T. Miyama (JAMSTEC, Japan)
15:50-16:10	Tide-surge interaction intensified by the Taiwan Strait	W. Z. Zhang (Xiamen, U., China)
16:10-16:30	Using All-Source Green's Functions to Establish Virtual Tidal Gauges (VTGs) for Canadian Eastern Coasts	Z. Xu (MLI, Canada)
16:30-18:00	Poster Session & Cocktail	

## 04 July 2017 Tuesday

### Coastal modeling II (Session Chair : X. H. Wang)

8:30-8:50	Cross-shelf Exchange along the eastern Maine coast	H. Xue (U. Maine, U.S.A.)
8:50-9:10	The adaptation of ROMS model to the Porsanger fjord, Norway (OYSA)	P. Aniskiewicz (CPS, Poland)
9:10-9:30	Lagrangian timescales in the Gulf of Finland	B. Viikmäe (Tallin U., Estonia)
9:30-9:50	High resolution coastal ocean modeling for research and applications	S. M. Varlamov (JAMSTEC, Japan)
9:50-10:10	Coffee Break	

<b>Circulation and dynamics I (Session Chair : J. Sheng)</b>		
10:10-10:30	Numerical modeling on seasonal variations of the Bering Slope Current and associated eddies	H. Mitsudera (Hokkaido U., Japan)
10:30-10:50	Spectral descriptions of submesoscale surface circulation in a coastal region off the East Coast of Korea	S. Y. Kim (KAIST, Korea)
10:50-11:10	The role of Ekman drainage in numerical investigations of dense water cascading on a slope: Sensitivity to vertical resolution and bottom boundary condition	J. Berntsen (U. Bergen, Norway)
11:10-11:30	Intrinsically and extrinsically forced circulation and associated biogeochemical response in China Seas	J. Gan (HKU., Hong Kong)
-	Reconstruction of ocean's interior from observed sea surface information (cancelled)	L. Liu (SCSIO, China)
11:30-13:00	Lunch	
<b>Circulation and dynamics II (Session Chair : J. Berntsen)</b>		
13:00-13:20	Development and Applications of Shelf Circulation Models for the Eastern Canadian Shelf	J. Sheng (Dalhousie U., Canada)
13:20-13:40	Storm surges in the Western South Atlantic: patterns of generation and propagation from long hindcast simulations	R. Camargo (U. Sao Paulo, Brazil)
-	Inertial instability and phase error in centered differencing and Euler-forward predictor-corrector schemes (cancelled)	J. Wang (NOAA, U.S.A.)
13:40-14:00	Evaluation and analysis of high-resolution models for oceans around Canada	Y. Lu (BIO, Canada)
14:00-14:20	Investigation of intrinsic ocean variability on the low-frequency variability of the northwestern Pacific subtropical mode water volume in a global ocean general circulation model (OYSA)	S. Y. Kim (KMOU, Korea)
14:20-14:40	Coffee Break	

<b>Turbulence and Waves I (Session Chair : Y. Noh)</b>		
14:40-15:10	Large Eddy Simulations of Wind- and Wave-Driven Turbulence; Implication from In-situ observations (invited)	Y. Yoshikawa (U. Kyoto, Japan)
15:10-15:30	Parameterizing TC-induced ocean cooling using neural networks (OYSA)	G. Jiang (Peking U. China)
15:30-15:50	Simulation of wave-current interactions under hurricane conditions using FVCOM: The impact on Wave	Y. Sun (BIO, Canada)
15:50-16:10	The effect of diurnal cycle of surface heat flux on the ocean mixed layer (OYSA)	Y. Ushijima (U. Kyoto, Japan)
16:10-16:30	Scaling of the mixed layer depth under surface heating by using LES - the effect of initial stratification. (OYSA)	Y. Choi (U. Yonsei, Korea)
16:30-18:00	Poster Session & Cocktail	

<b>05 July 2017 Wednesday</b>		
<b>Turbulence and Waves II (Session Chair : V. Vlasenko)</b>		
8:30-8:50	Arctic wave field reanalysis and observation in 2016	A. Webb (U. Tokyo, Japan)
8:50-9:10	Application of a nested wave model for wave energy resource assessment	K. Sasmal (U. Tokyo, Japan)
9:10-9:30	A numerical study of scattering of CTWs into Jervis Bay, Australia (OYSA)	F. Liao (UNSW, Australia)
9:30-9:50	Approximate dispersion relation for surface waves atop an arbitrarily depth-varying current (OYSA)	Yan Li (NUST, Norway)
9:50-10:10	Coffee Break	
<b>Turbulence and Waves III (Session Chair : Y. Yoshikawa)</b>		
10:10-10:30	Tidal energy focusing over an isolated underwater bank: observations and modelling	V. Vlasenko (U. Plymouth, U.K.)
-	Long-range propagation and associated variability of internal tides in the South China Sea (cancelled)	Z. Xu (Ins. Ocean., China)
10:30-10:50	Equatorial waves and their impact on circulation and air-sea interaction in the Somali Current region	T. G. Jensen (NRL, U.S.)
10:50-11:10	Impact of the incorporation of the salinity effect into atmospheric model on simulated precipitation	E. Lee (KIAPS, Korea)
11:10-13:00	Lunch	

<b>Marine ecosystem modeling I (Session Chair : F. Chai)</b>		
13:00-13:30	Role of Ocean bio-geochemical processes in Arctic climate variability (invited)	J. S. Kug (Postech, Korea)
13:30-13:50	Eddies affect marine biology in the South China Sea: Interactions with wind mixing	P. Xiu (SCSIO, China)
13:50-14:10	Impact of vertical mixing changes on air-sea CO2 fluxes in the Southern Ocean	H. Song (MIT, U.S.A.)
14:10-14:30	The physical and biological roles of mesoscale eddies on migration of Japanese eel larvae in western Pacific Ocean	Y. E. Chang (NTNU, Taiwan)
14:30-14:50	Coffee Break	
<b>Marine ecosystem modeling II (Session Chair : H. Song)</b>		
14:50-15:10	Natural and Artificial Iron Fertilization in the Ocean	F. Chai (Univ. Maine)
15:10-15:30	Modelling of larvae dispersion over isolated seamount	N. Stashchuk (U. Plymouth, U.K.)
15:30-15:50	The Oceanic Control of Atmospheric CO2: An Insight from a Model Study	E. Y. Kwon (IBS/PNU, Korea)
	Physical-biological model and its scientific research in the Taiwan Strait (cancelled)	Y. Jiang (Xiamen U., China)
15:50-16:10	Spatial variability of phytoplankton assemblages during the intermonsoon in baler bay, outer and inner casiguran sound, aurora, northeastern philippines (OYSA)	A.L.D Pena (U. Philippines, Philippines)
16:10-17:30	- Discussion on IWMO 2018 - Presentation of Awards and Prizes	
19:00-	Banquet: Han River Dinner Cruise	

## 06 July 2017 Thursday

### Data assimilation and ocean prediction I (Session Chair : Y. H. Kim)

8:30-9:00	Ocean forecasting: from descriptive to quantitative science (invited)	N. Pinardi (U. Bologna, Italy)
9:00-9:20	Predicting tides for new sites using 25 hour sea-level observations	D. S. Byun (KHOA, Korea)
9:20-9:40	Operational tide/storm surge and wave prediction system at KMA	K. Y. Byun (KMA, Korea)
9:40-10:00	The effect of density stratification on the prediction of global storm surges	T. Kodaira (U. Tokyo, Japan)
10:00-10:20	Coffee Break	

### Data assimilation and ocean prediction II (Session Chair : N. Pinardi)

10:20-10:40	Applications and studies using adjoint models based on the Meteorological Research Institute Community Ocean Model (MRI.COM) (invited)	Y. Fujii (MRI, Japan)
10:40-11:00	Updating ocean model/data assimilation components of the JCOPE2 operational ocean forecast system for biogeochemical applications	Y. Miyazawa (JAMSTEC, Japan)
11:00-11:20	Climate initialization applying ocean data assimilation for a ENSO prediction system	Y. H. Kim (KIOST, Korea)

# Poster Presentations

Climate dynamics and modeling	
An epoch-dependent change in driver of heat storage rate variability during recent decades in the upper western North Pacific	Gyundo Pak (KIOST, Korea)
A global spectral element model for Poisson equations and advective flow over a sphere	Huan Mei (Hohai U., Korea)
Potential decline of Atlantic Meridional Overturning Circulation under melting Greenland Ice Sheet (OYSA)	Mao-Cheng Huang (National Taiwan Normal U., Taiwan)
Feedback Process Responsible for Inter-Model Diversity of ENSO variability (OYSA)	Eun-Sook Heo (Yonsei U., Korea)
The evaluation on high frequency ground wave radar surface current observation system in Gulf of Thailand	Xunqiang Yin (SOA, China)
Coastal modeling	
Case Study on the three-dimensional structure of meso-scale eddy in the South China Sea based on a high-resolution model	Xia Changshui (SOA, China)
Observational Study of the Cold Waters over the Southwestern Yellow Sea in Summer 2016 (OYSA)	Zhanyuan He (Hohai U., China)
Episodic surface intrusions of Yellow Sea Warm Current in late winter	Zifeng Hu (Hohai U., China)
Revisit simulation of 1953 storm surge in the North Sea	Byung Ho Choi (Sungkyunkwan U., Korea)
Revisit Simulation of D-day : Normandy Invasion on 6th of June, 1944	Byung Ho Choi (Sungkyunkwan U., Korea)
Response of hydrodynamics to coastline changes in Hangzhou Bay, China	L. Li (SIO, China)

<b>Circulation and dynamics</b>	
Interannual variation of the surface circulation in the Japan/East Sea by external forcing and intrinsic variability	Byoung-Ju Choi (Chonnam National U., Korea)
Eddy induced cross-slope transport in the northern South China Sea	Na Liu (Chinese Ac. of Sci., China)
Numerical study of seasonal circulation and variability over the inner shelf of the northern South China Sea	Xiaomei Ji (Hohai U., China)
Evolution of wind-driven flows in the Yellow Sea during winter (OYSA)	Yong-Jin Tak (Seoul National U., Korea)
Role of the cold water in the formation of the East Korea Warm Current in the East/Japan Sea : numerical experiment (OYSA)	Yongyeop Kim (Seoul National U., Korea)
Variability of the Pacific North Equatorial Current from 1993 to 2012 Based on a 1/8° Pacific Model Simulation	Zhichun Zhang (Chinese Ac. of Sci., China)
Seasonal Characteristics and Dynamic Mechanism of the Surface Kuroshio Branch intrusion into the South China Sea	Jingsong Guo (SOA, China)
<b>Turbulence and Waves</b>	
Large eddy simulation of diffusion of a buoyancy source in ocean mixed layer (OYSA)	Bong-Gwan Kim (Seoul National U., Korea)
Simulation of typhoon-induced wave and surge using a coupled Ocean-Wave model	Ji-Seok Hong (Jeju National U., Korea)
Investigation of Air-Sea interaction in tropical Africa region using Regional Climate Model (RegCM4)	Kenfack Sadem Christian (U. Dschang, Cameroon)
Frontogenesis and turbulent mixing (OYSA)	Zhang Shuwen (Guangdong Ocean U., China)



<b>Marine ecosystem modeling</b>	
Harmful Algae Bloom models for <i>Cochlodinium polykrikoides</i> off the south coast of Korea (OYSA)	Il-Kyeong Ma (Pusan National U., Korea)
<b>Data assimilation and ocean prediction</b>	
Data assimilation of physical and chlorophyll observations in the California Current System using two biogeochemical models	Hajoon Song (MIT, U.S.A)
Prediction of M2 tidal surface currents by a global baroclinic ocean model and evaluation using observed drifter trajectories	Tsubasa Kodaira (U. Tokyo, Japan)