

S8/S10

MONITOR/TCODE Topic Session Recent advances in ocean observing systems: Scientific discoveries, technical developments, and data management, analysis and delivery

Co-Convenors: John (Jack) A. Barth (U.S.A.), Kyu Kui Jung (Korea), S. Allen Macklin (U.S.A.), Young Jae Ro (Korea) and Verena Tunnicliffe (Canada)

S8 Given the rapid development of ocean observing systems across the North Pacific, it is timely to discuss their use for scientific discovery and ecosystem research, and to describe the technical advancements in ocean sensors, observational platforms, and improvements in data management and exchange. By providing sustained interdisciplinary observations of atmospheric and oceanic processes, observing systems can capture important events influencing ocean ecosystems. Advanced sensors and platforms are creating new opportunities for deciphering ecosystem dynamics. With the increase in data return across observatories, it is critical that data management and interchange be addressed. Papers are welcome on: scientific discoveries made possible by ocean observing systems; observed climate impacts on ocean ecosystems and fisheries; advanced ocean sensors including optical, acoustic and genomic devices; autonomous platforms including underwater vehicles and vertical profilers; data management and exchange; and interoperability among ocean observatories. The intention is to have a mixture of scientific and technical talks on ocean observing systems. The session is complemented by commercial and academic displays around the theme of ocean observatories:

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S10 Profound changes have occurred in the North Pacific climate system, in the composition, abundance and distribution of its living marine resources, and in the human societies that depend on the North Pacific Ocean and its resources. New and novel techniques are needed to handle the ever-increasing volume of scientific data and to understand its meaning with respect to climate variability, anthropogenic impacts and the combined impacts that these changes have already had, and can be expected to have, on North Pacific ecosystems. This session will address methods such as high-volume data management, cabled observatories, regime shift detection and prediction, and ocean observing systems. Presentations describing links with climate and ecosystem change in the Arctic and relating to the International Polar Year Projects are also welcome. Oral presentations and electronic posters are encouraged.

Thursday, November 1, 2007 09:00 – 17:20

09:00 **Introduction by convenors**

09:05 **John Dower, Ian Beveridge and Richard Dewey (Invited)**

Drinking from the fire hose: Moving from the limitations of under-sampled field data to the prospect of “always on” data streams (S8/S10-4434)

09:30 **Mairi M.R. Best, B.D. Bornhold, S.K. Juniper and C.R. Barnes**

NEPTUNE Canada regional cabled observatory: Science plan (S8/S10-4452)

09:50 **Benoît Pirene (Invited)**

The NEPTUNE Canada Cabled Observatory Data Management System: Capturing and delivering terabytes of data each day (S8/S10-4443)

- 10:15 **David G. Foley**
Delivery and application of oceanographic satellite data in the era of integrated ocean observing systems (S8/S10-4380)
- 10:35 *Coffee / tea break*
- 11:00 **Hidekatsu Yamazaki, Yuji Kitade and Yusaku Kokubu (Invited)**
Developing a diagnostic system to assess red tide of Tokyo Bay (S8/S10-4430)
- 11:25 **Toshiro Saino (Invited)**
An ocean observing system for carbon cycle studies (S8/S10-4432)
- 11:50 **Young Jae Ro and Kwang Young Jung**
Integrative approach for the coastal dynamics and ecosystem in the Kangjin Bay, South Sea, Korea (S8/S10-4027)
- 12:10 **John A. Barth, R. Kipp Shearman, Anatoli Erofeev, Tristan Peery, Murray D. Levine, Walt Waldorf and Craig Risien**
Autonomous underwater glider observations off central Oregon and the Oregon Coastal Ocean Observing System (OrCOOS) (S8/S10-4440)
- 12:30 *Lunch*
- 14:00 **Svein Vagle (Invited)**
Continuous monitoring of marine mammals, natural and man made noise in Georgia Strait and Saanich Inlet using the VENUS observatory (S8/S10-4442)
- 14:25 **David W. Welch and George Jackson**
POST – A permanent continental-scale ocean observing array for fisheries research: Performance and scientific relevance (S8/S10-4165)
- 14:45 **Steven S. Rumrill**
A question-based approach to environmental monitoring within the South Slough National Estuarine Research Reserve, Oregon, USA (S8/S10-4426)
- 15:05 **Sonia D. Batten**
The CPR: Antique technology observing today's oceans (S8/S10-4184)
- 15:25 *Posters introduction*
- 15:40 *Coffee / tea break*
- 16:00 **Hanna Na, Kuh Kim and Kyung-II Chang**
Accuracy of surface current velocity measurements obtained from HF radar along the east coast of Korea (S8/S10-4391)
- 16:20 **Todd D. O'Brien, David L. Mackas, Mark D. Ohman and remaining WG-125 members**
Issues and methods for analyzing zooplankton time series – Sample applications of the SCOR WG125 toolkit (S8/S10-4386)
- 16:40 **Liyang Wan, Jiang Zhu, Changxiang Yan, Hui Wang, Laurent Bertino and Zhanggui Wang**
A “dressed” ensemble Kalman filter for data assimilation using the Hybrid Coordinate Ocean Model (S8/S10-4254)
- 17:00 **Mike F. Henry, Sonia D. Batten, K. David Hyrenbach, Ken H. Morgan and Bill J. Sydeman**
The meso-scale response of subarctic North Pacific seabird community structure to lower trophic level abundance and diversity (S8/S10-4447)

S8/S10 Posters and E-Posters

- S8/S10-4109 **Ferdenant A. Mkrtchyan and Vladimir F. Krapivin (CANCELLED)**
GIMS-Technology in remote monitoring of aquatic ecosystems
- S8/S10-4121 **Vladimir F. Krapivin and Ferdenant A. Mkrtchyan (CANCELLED)**
Expert system for operational environmental diagnostics
- S8/S10-4154 **Elena Dmitrieva, Vladimir Ponomarev, Natalia Rudykh, Nina Savelieva and Igor Rostov**
Data integration from different sources for the study of long-term variability in the ocean - Atmosphere system over the Japan/East Sea (E-Poster)
- S8/S10-4155 **Igor Rostov, Natalia Rudykh, Vladimir Rostov, Alexander Pan, Anton Gavrev, Elena Dmitrieva, Valentina Moroz and Olga Trusenkova**
New electronic atlases on oceanography of the Eastern Asia seas (E-Poster)
- S8/S10-4173 **Mingsen Lin and Lei Huang (CANCELLED)**
A study of algorithms for extraction of ocean parameters from a spaceborne microwave radiometer
- S8/S10-4211 **E.D. Vjazilov, N.N. Mikhailov, I.D. Rostov, N.I. Rudykh, V.I. Rostov and E.V. Dmitrieva**
National unified system of information on the World Ocean condition of Russia: Improvement and operational details (E-Poster)
- S8/S10-4234 **Jie Su, Yaobing Wang and Di Yang**
Research on the stability of *Escherichia coli* as an indicator for detecting fecal pollution in seawater
- S8/S10-4242 **Thomas C. Royer and Chester E. Grosch**
Coastal freshwater discharge in the Northeast Pacific using an updated hydrology model
- S8/S10-4296 **S. Allen Macklin, Bernard A. Megrey, Kimberly Bahl and Ruguang Yin**
Pacific-wide marine metadata management and delivery: The PICES Metadata Federation
- S8/S10-4329 **Chuanlin Huo, Zhengxian Yang, Quan Wen and Daoming Guan**
Development and implementation of a multi-sectoral marine environmental monitoring programme for Bohai Sea
- S8/S10-4355 **Yong Yao and Shenglin Ye**
Application of satellite altimeter data in analysis and prediction of the sea surface wind and wave fields over the China Sea and Western Pacific Ocean
- S8/S10-4365 **Murray D. Levine (CANCELLED)**
Long-term times series on the Oregon shelf: The importance of high-frequency processes
- S8/S10-4409 **Albert J. Hermann, Christopher W. Moore, Sarah Hinckley, Carolina Parada, Elizabeth L. Dobbins and Dale B. Haidvogel**
Immersive visualization online: A modern approach for the rapid exploration of Eulerian and individual-based models (E-Poster)
- S8/S10-4417 **Edward D. Cokelet, Calvin W. Mordy, Antonio J. Jenkins, W. Scott Pegau and Margaret E. Sullivan (CANCELLED)**
Underway oceanographic measurements from an Alaskan state ferry
- S8/S10-4441 **John A. Barth, Murray D. Levine, Walt Waldorf, Andrew Barnard, Bruce Rhoades, Alex Derr, John Koegler and Daniel Whiteman**
A vertical profiling mooring for coastal observations: Coastal Autonomous Profiling and Boundary Layer System (CAPABLE)

- S8/S10-4447 **Mike F. Henry, Sonia D. Batten, K. David Hyrenbach, Ken H. Morgan and Bill J. Sydeman**
The meso-scale response of subarctic North Pacific seabird community structure to lower trophic level abundance and diversity (MOVED TO ORAL SECTION)
- S8/S10-4450 **Kathy J. Kuletz, Elizabeth A. Labunski, David B. Irons and Shannon Fitzgerald (CANCELLED)**
The Alaska Pelagic Seabird Observer Program: A tool for tracking changes in seabird distribution in the North Pacific
- S8/S10-4451 **Gitai Yahel, Ruthy Yahel, Timor Katz, Boaz Lazar, Barak Herut and Verena Tunnicliffe**
Fish activity, a major mechanism for nutrient and carbon recycling from coastal marine sediments
- S8/S10-4460 **Peter G. Phibbs and Stephen Lentz**
Technology for cabled ocean observatories and their vertical profiler systems
- S8/S10-4487 **Joon-Yong Yang, Kyu-Kui Jung, Hee-Dong Jeong, Young-Sang Suh and Chang-Su Jung**
A real-time coastal information system for aquaculture environmental monitoring
- S8/S10-4492 **Susan Banahan**
An overview of the Ocean Observatories Initiative (OOI) network
- S8/S10-4518 **John A. Barth, R. Kipp Shearman, Anatoli Erofeev, Tristan Peery, Murray D. Levine, Walt Waldorf and Craig Risien**
Autonomous underwater glider observations off central Oregon and the Oregon Coastal Ocean Observing System (OrCOOS)
- S8/S10-4519 **Yoshiyuki Kaneda**
Dense Ocean floor Network system for Earthquakes and Tsunamis (DONET)