S9 POC/CCCC/MONITOR Topic Session
Operational forecasts of oceans and ecosystems

Co-sponsored by ICES

Co-Convenors: Michael G. Foreman (Canada), Shin-ichi Ito (Japan), Skip McKinnell (PICES) and Francisco E. Werner (U.S.A.)

Numerical models of ocean dynamics are becoming increasingly sophisticated and are now used to forecast future ocean states. The forecasts vary in geographic scale from local embayments to the global ocean, and on temporal scales, from one day to several years. Improvements in ocean forecasting will contribute directly to forecasts of fisheries where the linkages between ocean dynamics, fish migration, and fishery ground formation are understood. Likewise, lower trophic level (LTL) ecosystem models have been coupled to numerical models of ocean circulation and tested at many sites. LTL models can now anticipate the production of planktonic prey and biomass when the state of the ocean is captured accurately by ocean circulation models. Moreover, fish growth and recruitment models are starting to be coupled to LTL ecosystem models. The growing interest in ecosystem-based management, and the need to develop a management/decision policy will no doubt rely upon forecasts from coupled physical-ecosystem models. To fully realize the potential of model-based products for ecosystem-based management, a relatively high predictability of ocean structures is essential. This session will review the current status of operational ocean prediction models, discuss the ability of physical models to forecast ecosystem state and clarify the approaches needed for future studies and improvements. Ideally, we seek papers describing operational forecasts of oceans and/or ecosystem-state and, more importantly, evaluations of their performance. Operational forecasts can be based on numerical or statistical models, and comparisons of these two approaches are welcome.

Friday, November 2, 2007   09:00 – 17:15

09:00   *Introduction by convenors*

09:10   **Masafumi Kamachi, Toshiya Nakano, Satoshi Matsumoto, Norihisa Usui, Yosuke Fujii and Shiroh Ishizaki (Invited)**
An example of operational ocean data assimilation and prediction (S9-4268)

09:40   **Shin-ichi Ito, Shigeho Kakehi, Yasumasa Miyazawa, Takashi Setou, Kosei Komatsu, Manabu Shimizu, Akira Kusaka, Kazuyuki Uehara, Yugo Shimizu, Akira Okuno and Hiroshi Kuroda**
Predictability of location of the Kuroshio Extension and the Oyashio First Branch by JCOPE (S9-4198)

10:00   **Yasumasa Miyazawa, Takashi Kagimoto and Kosei Komatsu**
Water mass structure in the Kuroshio-Oyashio mixed water region reproduced by JCOPE2 (S9-4100)

10:20   *Coffee / tea break*

10:50   **Einar Svendsen (Invited)**
Operational oceanography and the ecosystem approach (S9-4180)

11:20   **Alain F. Vézina, Charles Hannah and Mike St. John (Invited)**
A top-down approach to modelling marine ecosystems in the context of physical-biological modelling (S9-4240)

11:50   **Susan E. Allen, A. Kathleen Collins, Douglas J. Latornell and Rich Pawlowicz**
Predicting the timing of the spring bloom in the Strait of Georgia (S9-4108)

12:10   **Edmundo Casillas and William Peterson**
Recent high-frequency variability in the PDO and ocean conditions in the northern California Current: Impacts on ecosystem structure and salmon growth and survival (S9-4408)

12:30   *Lunch*

14:00   **Albert J. Hermann, Thomas M. Powell, Wei Cheng and Sarah Hinckley**
Performance of NEMURO with the Regional Ocean Modeling System (ROMS) for the Coastal Gulf of Alaska (S9-4406)

14:20   **Wei Cheng, Al Hermann, Sarah Hinckley and Ken Coyle**
Interannual variability in the Gulf of Alaska: A perspective based on a coupled bio-physical model (S9-4401)

14:40   **William Crawford and Ian Perry**
Eastern Gulf of Alaska: Climate variability, future projections and ecosystem impacts (S9-4072)

15:00   **Elena I. Ustinova and Yury D. Sorokin**
Statistical forecasting of ice cover in the Far-Eastern Seas (S9-4301)

15:20   *Coffee / tea break*

15:40   **Hiroaki Tatebe, Ichiro Yasuda and Hiroaki Saito**
Horizontal transport of *Neocalanus* copepods in the subarctic and northern subtropical North Pacific (S9-4328)

16:00   **Changshui Xia, Fangli Qiao,Yongzeng Yang and Guansuo Wang**
The circulation and water exchange of the Bohai Sea from a wave-tide-circulation coupled model (S9-4308)

16:20   **George V. Shevchenko and George G. Novinenko**
Monitoring of temperature conditions in the Sea of Okhotsk (S9-4098)

16:40   **Yury I. Zuenko, E.I. Ustinova, V.N. Vdovin, V.A. Nuzhdin, Z.G. Ivankova and N.T. Dolganova**
Temporal lags between changes of climatic indices and some components of the Japan/East Sea ecosystem (S9-4477)

17:00   *Summary and wrap up*

S9 Posters

S9-4075   **Yong-Kyu Choi, Young-Sang Suh, Ki-Tack Seong, Sang-Woo Kim, Won-Deuk Yoon, Woo-Jin Go, In-Seong Han and Joon Yong-Yang**
Bimonthly variation of synoptic features in hydrography and nutrient in the Southern Sea of Korea

S9-4366   **J.J. Colbert, Thomas C. Wainwright and Bernard A. Megrey**
Linking the NEMURO suite into the Earth Systems Modeling Framework