

# S10 CCCC/MODEL Topic Session

## Modeling approaches that integrate multiple spatial scales and trophic levels between shelf and open oceans

*Session Convenors: Shin-ichi Ito (Japan), Michio J. Kishi (Japan), Bernard A. Megrey (U.S.A.) and Francisco E. Werner (U.S.A.)*

Marine ecosystems are characterized by complex trophic interactions that occur on disparate time and space scales. Modulation by physical and biogeochemical properties further complicates these interactions. To date, most studies of marine ecosystems consider shelf and open ocean regions separately. However, through active migration and/or advective processes, shelf and oceanic populations are coupled. In this session, we welcome modeling contributions that consider shelf, open ocean and coupled shelf-ocean domains that integrate across multiple spatial scales, temporal scales and trophic levels. From these studies we seek to develop a better understanding of how open ocean and shelf ecosystems are linked.

*Wednesday, October 20, 2004                    8:30-11:50*

- 08:30-09:00     **Xinyu Guo, Yasumasa Miyazawa and Toshio Yamagata** (Invited)  
Intrusion of Kuroshio water onto the continental shelf in the East China Sea and its influences on the ecosystem (S10-1919)
- 09:00-09:20     **Jian Su and Lai-Ah Wong**  
A three-dimensional numerical study of the spirals and water exchange near the shelf front in the northern South China Sea in winter (S10-1796)
- 09:20-09:40     **Tian Tian, Hao Wei, Jian Su and Chang-Soo Chung**  
Simulations of annual cycle of phytoplankton production and the utilization of nitrogen in the Yellow Sea (S10-1798)
- 09:40-10:00     **Maki N. Aita, Yasuhiro Yamanaka and Michio J. Kishi**  
Interdecadal variation of lower trophic ecosystems in the Northern Pacific between 1948 and 2002, using a 3-D physical-NEMURO coupled model (S10-1960)
- 10:00-10:30     **Coffee break**
- 10:30-10:50     **Shin-Ichi Ito, Miciho J. Kishi, Daiki Mukai, Yutaka Kurita, Yasuhiro Ueno, Yasuhiro Yamanaka, Bernard A. Megrey and Francisco E. Werner**  
A study for interannual variability of Pacific saury using a simple 3-box model of NEMURO.FISH (S10-2120)
- 10:50-11:10     **Albert J. Hermann, Sarah Hinckley, Elizabeth L. Dobbins and Dale B. Haidvogel**  
Quantifying cross-shelf and vertical nutrient flux in the Gulf of Alaska with a spatially nested, coupled biophysical model (S10-2041)
- 11:10-11:30     **Carolina Parada and Sarah Hinckley**  
A biophysical model for walleye pollock in the Gulf of Alaska to study recruitment variability: A coupled modelling approach (S10-2112)
- 11:30-11:50     **Andrew W. Leising**  
The effects of seasonal variability on copepod overwintering and population success: The mismatch-mismatch of zooplankton and phytoplankton (S10-2062)

## **Posters**

### **Irina V. Ishmukova**

Assessing the quality of marine ecosystem models (S10-1920)

### **Daiki Mukai, Fei Chai and Michio J. Kishi**

Modeling interannual and decadal variability of Pacific saury (S10-2083)

### **Annette Samuelsen and James J. O'Brien**

Influence of energetic meso-scale eddies on the lower trophic levels of the ecosystem in the northeastern tropical Pacific (S10-1978)