

W4 BIO Workshop **Marine ecosystem model inter-comparisons (II)**

Co-Sponsored by ESSAS

Co-Convenors: Harold P. Batchelder (U.S.A.), Shin-ichi Ito (Japan) and Bernard A. Megrey (U.S.A.)

The objective of the Marine Ecosystem Model Inter-comparison Project (MEMIP) is to compare the performance of various lower trophic level marine ecosystem simulation models at predicting the abundance and distribution of zooplankton functional groups. Models with high performance and broad generality will be priority candidates for examining the state of marine ecosystem's response to future global climate change.

This workshop will be technical, "hands-on", and focus on beginning to parameterize, execute and calibrate various 1-D versions of biogeochemical lower trophic level (LTL) marine ecosystem models. Multiple ecosystem models will be configured to three Pacific Ocean "location testbeds". The 1-D physical forcing for each site will be fixed (*e.g.*, to enforce a common physical environment) so that differences observed among simulations at a single site are due only to differences in ecosystem models. The three testbeds will be selected based on the availability of data sets suitable for this exercise—data for multiple years, good seasonal coverage, and breadth of state variables spanning inorganic nutrients, chlorophyll (or preferably phytoplankton carbon or nitrogen), and zooplankton biomass measures are needed. We plan to apply LTL models to Oyashio locations such as stations along Japan's A line, the middle shelf of the eastern Bering Sea (*i.e.*, at mooring M2), and a shelf station on the Newport line to represent the California Current upwelling system. The models will be used to identify mechanisms that are important controls on the level and variability of secondary production and to bound the levels of uncertainty in model predictions by calculating ensemble statistics. Comparisons of identical ecosystem model formulations (*e.g.*, not tuned to each specific location) at multiple locations will provide information on the spatial-temporal robustness of particular model structures and parameterizations.

Day 1, Saturday, October 24 (9:00-18:00)

- 9:00 ***Introduction by Convenors***
- 9:20 **Yvette H. Spitz (Invited)**
Considerations and challenges inherent to the intercomparison of pelagic ecosystem models (W4-5715)
- 9:50 **Naoki Yoshie, Shin-ichi Ito, Kosei Komatsu, Takahiko Kameda, Tsuneo Ono, Kiyotaka Hidaka, Toru Hasegawa, Akira Kuwata, Miwa Nakamachi, Yuji Okazaki, Takeshi Okunishi, Kazuaki Tadokoro, Hiroaki Saito and Yasuhiro Yamanaka (Invited)**
Comparison of two marine ecosystem models NEMRUO and eNEMURO in the western North Pacific (W4-5908)
- 10:20 Short discussion
- 10:30 ***Coffee / tea break***
- 10:50 **Angelica Peña (Invited)**
Comparing the responses of simple plankton ecosystem models to alternate formulations and increasing complexity (W4-5968)
- 11:10 Discussion on model comparison methods (testbeds, physical model, evaluation methods)
- 12:30 ***Lunch***
- 14:00 Coding for model comparison
- 15:30 ***Coffee / tea break***

15:50 Coding for model comparison

17:20 Report on today's progress

18:00 ***Day 1 Workshop ends***

Day 2, Sunday, October 25 (9:00-15:30)

9:00 ***Introduction by Convenors***

9:05 Discussion on model results

10:30 ***Coffee / tea break***

10:50 Discussion on model results

12:30 ***Lunch***

14:00 Discussion on future plans and writing report

15:30 ***Workshop ends***