

Breakout 2: Combining models with satellite data and other time-series observations

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1. Inevitable future gap in U.S. ocean color data

Look to international agreements with other countries that are flying ocean color sensors (like the Indian 'Ocean Color Monitor')

2. There is a model/data mismatch in terms of chlorophyll (both models and satellite data generate much more information about phytoplankton than just chlorophyll)

- a) Need new set of modeling approaches, e.g. assimilating IOPS
- b) Get more information from satellites than just chlorophyll, including: DOC, POC, phytoplankton carbon, taxonomic/functional groups, phytoplankton cell size...

3. We are evaluating models in different ways with different data sets with duplication of effort

Need comprehensive validation set for models: satellite + in situ data; one mega biogeochemical database

4. There is a significant model and data gap in coastal/boundary regions

Geostationary satellite

More unstructured grids, nested model formulations

5. We have some temporal resolution problems with satellite data (e.g. Southern Ocean)

a) Underway measurements on Ships of Opportunity and on UNOLS vessels, including: pCO₂, optics, temperature, conductivity, DIC, pH, stimulated fluorescence, HPLC pigments, O₂/Argon ratios...

b) Sensors on animals (more data from elephant seals than ARGO floats)

6. We are not always making as much use of all satellite products as we should/could

Models should be making more use of other satellite products, including SST, SSH, ice, wind...

7. Not enough ocean representation in the workshops that are currently defining what science questions will be addressed by the next generation of satellite missions (ACE, GEO-CAPE, HypIRI)

Need 'users' to get involved and go to these workshops!