



Eulerian observatories and a modeling perspective of pelagic-benthic coupling in the open ocean.

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Eulerian time series stations provide unique data sets capturing the temporal variability of ocean ecosystems and biogeochemistry, as well as trends driven by anthropogenic forcing. With the international program EuroSites starting, the need for a close interaction between observational scientists and their modeling counterparts gets again on the forefront of discussion. So far, the use of time series observations by the modeling community has mostly been limited to 1D applications. While there are distinct advantages to this approach, the challenge of predicting the future evolution of marine ecosystems and biogeochemical cycles in response to climate change calls for an integrated global representation of the system. In this communication, I shall present a synthetic overview of how these data might be used within the context of global ocean biogeochemical modeling. I exemplify the capability of a global model to capture surface ocean ecosystem variability, export and deep water fluxes, as well as exchanges across the sediment-water interface. It is intended as a status report highlighting needs for model improvement and limitations by currently available data sets and to promote discussion.