



The role of submesoscale currents in structuring phytoplankton diversity

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There is increasing evidence that the distribution of phytoplankton is shaped by short-lived submesoscale currents that are difficult to observe, model, and explain theoretically. Whether and how these intense three-dimensional currents structure the diversity of the phytoplanktonic community is a subject of active debate. I will present a synthesis of recent observations (both satellite and in-situ) and models which suggest that ecological interactions at the submesoscale may be important in structuring phytoplankton biodiversity, through active, passive and reactive processes. In particular, I will present results from a submesoscale permitting OGCM coupled with an ecosystem model that resolves 100 phytoplankton species, sorted by functional groups and size and show the peculiarities of phytoplankton assemblages over fronts.