



Meso- to Submesoscale Dynamics in the Ocean

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Message from the Guest Editors

Dear colleagues,

Oceanic mesoscale and submesoscale processes with the respective horizontal scales of $O(10-100)$ km and $O(0.1-10)$ km are ubiquitous and important features in the ocean. Meso- to submesoscale dynamical processes play a crucial role in the oceanic energy cascade that maintains the balance of the ocean circulation's energy reservoir. And, they have a huge capability to transport oceanic tracers (e.g., heat, salt, nutrients, carbon, oxygen etc.) in three dimensions, significantly modulating the air-sea interaction and biogeochemical processes. With the advent of super computer and high-resolution observation technologies, considerable knowledge of meso- to submesoscale processes has been obtained, but many issues such as their fine three-dimensional structures, quantitative roles in tracer transports, generation and decay mechanisms, interactions with other processes and their route of energy cascade, subgrid parameterizations in models, impacts on large-scale circulation, air-sea interaction, as well as biogeochemical processes are still elusive. In this Special Issue, we welcome research that is relevant, but not limited to, the above issues.





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Message from the Editor-in-Chief

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