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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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Special Issue

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Message from the Editor-in-Chief

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