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Ocean reanalysis data produced by Japan Coastal Ocean Predictability Experiment (JCOPE)

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Using an ocean forecast system JCOPE2, we have created the reanalysis data with high horizontal resolution of 1/12 degree to describe the oceanic variability associated with the Kuroshio-Kuroshio Extension, the Oyashio, and the mesoscale eddies from 1993 to present. The products made by an eddy-resolving ocean model combined with the three-dimensional variational data assimilation well reproduced the mean water mass property in the western North Pacific and the interannual variations of the Kuroshio-Kuroshio Extension and the Oyashio coastal branch. We have provided the reanalysis data for many researchers to facilitate various kinds of studies using the ocean reanalysis data. In this presentation, we show some examples of the analyses using our reanalysis data. For example, we found that both the mean kinetic energy of the Kuroshio Extension axis at the first meandering crest and southward intrusion of the Oyashio coastal branch were closely related with the horizontal distribution of both the Oyashio Water and North Pacific Intermediate Water within the appropriate interannual time scale.

Keywords: Ocean General Circulation Model, reanalysis, remote sensing data, in-situ data, data assimilation