

Global ocean state estimation with new float observations

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Argo floats are successfully contributing to global ocean state estimation. As the important roles of deep ocean to global changes has been recognized, sustainable deep ocean monitoring networks that use autonomous profiling floats have been widely proposed by the ocean observation community. An increasing number of deep-float deployment initiatives around the world. Deployed floats promise to provide unprecedented deep ocean information. Here we applied deep float data deployed by JAMSTEC to a deep ocean state estimation by using a four-dimensional variational approach. The results demonstrate that the available float data enables some corrections of the modeled ocean state locally for each float although the impact of the data on a basin-scale deep ocean state estimation was still limited in this study due to sparseness of used float data. This implies strategic deployments of deep float in the world's ocean can immediately contribute to improvement of a current global deep ocean state estimation.

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