

## Reproduction of iron-rich intermediate water in the Sea of Okhotsk by high resolution biogeochemical model.

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Recent observation studies suggest that iron supply from sediment on the northwest continental shelf the Okhotsk Sea plays an important role for the subarctic primary production (e.g. Nishioka et al., 2013). Dense shelf water (DSW) takes up iron from sediment, thereby transporting iron into the Okhotsk Sea intermediate water. However, observational data is still limited.

To clarify detailed structure of iron circulation in the North Pacific, we develop the high-resolution biogeochemical model. However, our model did not reproduce high iron concentration in the intermediate water the Sea of Okhotsk. We use biogeochemical model developed by Parekh et al. (2005). They set the value of total ligand concentration to constant value in all place. Recent observations, however, suggest that ligand concentration varies with sea area and depth. Then, we conducted a new experiment with the ligand concentration changed in the vertical direction. The iron concentration intermediate water of the new experiment became higher than before.

Keywords: High-resolution modeling, Iron-rich intermediate water, Ligand concentration