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Abstract

Although a lot of studies of ocean carbon cycle had focused on phytoplankton in euphotic zone, ecosystem under euphotic zone should be paid attention to understand the carbon cycle in the ocean, because average depth of ocean reach 3800m. However conventional models focused on euphotic zone have considerably underestimated zooplankton biomass in deep sea. We carried out sensitivity analysis on Ivlev constant relating in feeding limitation and migration effect using new ocean carbon cycle model with more plankton functional groups than conventional one. Sensitivity analysis on zooplankton parameters shows a possibility that underestimation of zooplankton biomass is due to feeding limitation of zooplankton, it is suggested that large size zooplankton has the smaller feeding limitation than the small size one. Additionally zooplankton daily migration shows possibility that play an important role that link surface to deep sea in carbon cycle.