冬季播磨灘のノリ色落ち対策に関わる短期環境予測実用モデルの開発

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Abstract

A new practical short-term forecast system on the nutrients and phytoplankton concentrations in winter season was developed, which handled the issue of *Porphyra* bleaching (discoloration of cultured Nori), and applied to Harima-Nada, eastern Seto Inland Sea, Japan. A nonsteady state simulation usually needs too much time to get the calculation results for prompt reporting. However, this system can calculate a prediction for around 10 days on a PC immediately, depending on the case, by using tidal current, drift current (48 cases), density current (5 cases) and tidal residual current which were compiled into a database made by a steady calculation using a multi-level flow model (Nakata *et al.*, 1983). Model validation about dissolved inorganic nitrogen (DIN), dissolved inorganic phosphate (DIP) and phytoplankton concentration were examined respectively, and showed a result that the distribution tendency could reappear well. Although at the case of phytoplankton blooming, the prediction value showed the tendency that was slightly high on the DIN and DIP, and low on the plankton concentration for the observed value. Therefore a practical revision method concerning the nutrient concentrations was devised by using the simple estimation of biochemical processes such as the nutrient uptake of phytoplankton.