



Estimate sea surface salinity distribution from the Changjiang River plume using artificial neural network

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Measuring Sea Surface Salinity (SSS) by satellites is the one of hot issues of the oceanography. Especially, SSS variability by the river discharges significantly influences near coastal regions. However, there were no satellite observations to investigate coastal SSS variability. Therefore, many studies were conducted for estimating SSS using ocean color data due to the fact that the relatively low SSS presents relatively high optical features. To measure SSS, in this study, Geostationary Ocean Color Imager (GOCI) data was analyzed using Artificial Neural Network (ANN) algorithm in the Changjiang River plume region. In order to train and validate the ANN, Hybrid Coordinate Ocean Model (HYCOM) SSS data was used. The correlation and RMSE between HYCOM and predicted SSS were 0.90 and 0.67 psu during the training period. The correlation and RMSE for none training periods were 0.87 and 1.18 psu, respectively. These results suggest the possibility of estimating SSS using GOCI data based on the ANN method in this region. Although the accuracy of HYCOM SSS was controvertible in this region, it is useful for detecting the pattern of SSS.