Tuesday, October 9
Poster Session 2
10:30–12:30

Poster 233
REMOTELY SENSED PHYTOPLANKTON SIZE CLASSES IN THE ENTIRE CONTINENTAL SHELF SEA OF CHINA

Phytoplankton size classes (PSCs) play a critical role in exploring marine ecological and biogeochemical processes. Remote sensing has been regarded as the most important tool for acquiring the continuous observational data spatially and temporally, however, satellite-derived PSCs is still quite limited for optically complex coastal oceans. The Bohai Sea (BS), Yellow Sea (YS) and East China Sea (ECS) which host one of the most turbid coastal and shelf seas globally were taken as an example in this study. Using in situ pigment data and sea surface temperature(SST), parameters of three-component model were adjusted and an improved algorithm for PSCs retrieval was proposed. PSCs derived from images revealed that microplankton was dominant in the BS, YS and the nearshore ECS and nanoplankton distributed widely in the entire study area, while picoplankton mainly distributed in the offshore ECS in April, which was consistent with in situ investigation. Validation indicated that the improved algorithm provided a more accurate estimation of PSCs. Diurnal variations of PSCs were mainly affected by tidal currents and light intensity depending on different water types. Monthly variations in PSCs were captured in the YS, which had significant correlations with environmental factors, such as SST and mixed layer depth. These illustrated that the improved algorithm can provide worthwhile information of long-term spatial-temporal changes of PSCs for a better understanding and assessing of the marine ecosystem functioning in the continental shelf sea of China.

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