

Tuesday, October 9

Poster Session 2

10:30–12:30

## Poster 225

### ALGORITHM FOR LOW-SALINITY PLUME IN THE EAST CHINA SEA DURING THE SUMMER SEASON USING TWO-STEP EMPIRICAL APPROACH FOR GOCI AND MODIS SATELLITE SENSORS

To detect and trace offshore surface low-salinity water (LSW) in the East China Sea, a proxy was developed using surface water beam attenuation coefficient (cp), and salinity matched with synchronous GOCI and MODIS satellite data from 15-year summer cruises (2003–2017) using a two-step empirical approach. First, a relationship between in situ salinity and cp was obtained. Second, in situ cp was matched with GOCI and MODIS radiance ratios of all available blue-to-green wavelengths. Finally, satellite-derived surface salinity was determined directly by combining the two empirical relationships, providing a robust estimate over a range of salinities (22–34 psu). Our algorithm was then compared with other salinity algorithms based on CDOM. This significantly improves the limited spatial and temporal resolution of surface salinity distribution obtained by shipboard sampling. The resulting correlation is best explained as mixing between low-salinity plume waters and around normal saline waters. The empirical relationships were used to map satellite-derived salinity using the average of GOCI images during each summer cruise. As expected for summer, spatial patterns of LSW plumes with high cp were connected to the mouth of the Changjiang River and extended to the east-northeast. Saline water with lower cp was confined to the warm current and upper slope in the eastern part of the study area. This proxy approach can be applied throughout the region of shipboard sampling for more detailed coverage and analysis.

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