

Distribution of Changjiang Diluted Water (CDW) and interannual variation in this decade detected by satellite chlorophyll-a

Hyun-cheol Kim¹, Im Sang Oh², Sinjae Yoo³, Jianrong Zhu⁴ and Joji Ishizaka⁵

¹Korea Polar Research Institute, KORDI, Songdo Techno Park, 7-50 Songdo, Yeosu, Incheon, 406-840, Korea
(Rep. of). Tel: 82-32-260-6259; Email: kimhc@kopri.re.kr

²School of Earth and Environmental Sciences, Seoul National University, Korea (Rep. of)

³ Korea Ocean Research and Development Institute, Korea (Rep. of)

⁴ State Key Laboratory of Estuarine and Coastal Research, East China Normal University, China

⁵ Faculty of Fisheries, Nagasaki University, Japan

Summer satellite chlorophyll-a distribution in the East China Sea during last decade was analyzed. With statistical analysis, K-means clustering, proper satellite chlorophyll-a concentration indicating the Changjiang Diluted Water (CDW) was found. During 1998-2007, the distribution of CDW controlled by the Changjiang summer freshwater discharge (SFD) showed significant interannual variations. The Sea-viewing Wide field-of-view Sensor (SeaWiFS) chlorophyll-a showed that interannual variations of the spatial distribution of high satellite chlorophyll-a ($>0.9-0.4 \text{ mg m}^{-3}$) were well corresponded with distribution of low salinity CDW ($<30-32$), and that interannual variation of the CDW area was associated with the interannual variation of SFD. Correlation analysis indicated that low salinity CDW area, corresponding to high satellite chlorophyll-a area, spread eastward in the East China Sea with 1 to 2 months time lag from the discharge.