

## Long-term variation of SeaWiFS/MODIS chlorophyll-a in the Southern Ocean

Eunho Ko<sup>1</sup>, Jisoo Park<sup>1\*</sup> and Hyun-cheol Kim<sup>1</sup>

<sup>1</sup>Korea Polar Research Institute, KIOST, Korea (Rep. of)

\*E-mail: jspark@kopri.re.kr

We investigated the variability of surface chl-a concentration in the Southern Ocean. To check the long-term trend of surface chl-a concentration, we produced a 16-year-long ocean color data set in combination of SeaWiFS (Sea-viewing Wide Field-of-view Sensor) data and MODIS (Moderate Resolution Imaging Spectroradiometer) data. The surface chl-a anomaly showed an increasing trend for recent 16 years in the entire Southern Ocean. However, there were different trends when the Southern Ocean was geographically divided into three sectors (Southern Atlantic, Southern Pacific, and Southern Indian sectors). In particular, the surface chl-a anomaly in the Southern Indian sector indicated a decreasing tendency. To understand what climate factors affect the long-term trend of surface chl-a concentration, we firstly examined the relationship between the Southern Annular Mode (SAM) and surface chl-a concentration. Correlation between SAM and surface chl-a concentration was positive in the south of Sub-Antarctic Front (SAF) whereas it was negative in the north of SAF. However, any correlations between SAM and chl-a concentration were not shown in the Southern Atlantic sector. Here, we discuss on the long-term variation of surface chl-a concentration due to climate factors in the Southern Ocean.

---