

## Ocean Color from GCOM-C and Himawari-8

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JAXA polar orbit satellite, Global Change Observation Mission for Climate (GCOM-C) which carries Second-generation Global Imager (SGLI) will be launched in 2017. SGLI will have 19 bands from near-UV (380 nm) to thermal infrared (12  $\mu$ m) wavelengths with 1150-km swath width. A key characteristic of SGLI for the ocean color observation is high spatial resolution (250 m). JMA geostationary meteorological satellite, Himawari-8 has been in regular operation since July 7, 2015. Himawari-8 carries Advanced Himawari Imager (AHI) which has six spectral bands from visible to shortwave infrared wavelengths (470 nm, 510 nm, 640 nm, 856 nm, 1610 nm, and 2257 nm) with 500-m (640-nm band), 1-km (470, 510, and 856-nm bands), and 2-km (1610, and 2257-nm bands) spatial resolution.

Characteristics of the AHI for the ocean-color observation are high temporal resolution (10 min for the full-disk observation), small number of spectral bands, and relatively lower signal-noise-ratio (SNR) than general ocean-color sensors because the main target of AHI is meteorological observations. We have developed empirical ocean-color algorithms for SGLI and AHI spectral response (Murakami et al., OSJ 2015 fall meeting).

The SGLI 250-m spatial resolution can be advantage in monitoring of fine structures of coastal areas and front of currents, and detection of local phenomena such as red tide. However, they can change quickly and sometimes cannot be tracked by the temporal resolution of SGLI (once/2-day). Accuracy of ocean color estimate from instantaneous AHI measurements (every 10 min) is relatively worse due to the limited number of bands and low SNR. This study shows, however, the random noise can be reduced by averaging for about one hour (i.e., six scenes) when the 1- or 2-km scale phenomena can be assumed to be stable for an hour. Daily movement of front structures can be detected by the hourly AHI ocean color. Effective use of high spatial resolution data of the polar orbit satellite such as GCOM-C and high temporal resolution data of the geostationary orbit satellite such as Himawari-8 will be required in the next step.

Keywords: GCOM-C, SGLI, Himawari-8, Ocean color