**Seasonal and Interannual Variations in Water Optical and Biogeochemical Properties Measured by the Geostationary Ocean Color Imager (GOCI)**

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**ABSTRACT**

The first geostationary ocean color satellite sensor, Geostationary Ocean Color Imager (GOCI) onboard South Korean Communication, Ocean, and Meteorological Satellite (COMS), was launched in June of 2010. GOCI has 8 spectral bands covering 412-865 nm, can monitor and measure ocean phenomenon over a local area of the western Pacific region. In collaboration with Korean scientists, the NOAA team has produced improved GOCI ocean color products. The GOCI-derived ocean color data can be used to effectively monitor ocean phenomenon in the region such as tide-induced re-suspension of sediments, diurnal variation of ocean optical and biogeochemical properties, and horizontal advection of river discharge. In this presentation, we use four-year GOCI ocean color data to characterize seasonal and interannual variations in water optical and biogeochemical properties in the western Pacific region. In addition, some extensive results of GOCI-measured ocean diurnal variations are shown in various coastal regions of the Bohai Sea, Yellow Sea, and East China Sea. With possibly eight-time measurements daily, GOCI provides a unique capability to monitor the ocean environments in near real-time, and GOCI data can be used to address the diurnal variability in the ecosystem of the GOCI coverage region. The GOCI results demonstrate that GOCI can effectively provide real-time monitoring of water optical, biological, and biogeochemical variability of the ocean ecosystem in the region.