

Observations and Model Assimilation Using GCOM-C/SGLI and Himawari-8/AHI in the Western Pacific Ocean

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Ocean environment of the Asia-Oceania region is influenced by growing human activities as well as the natural variabilities such as monsoon, typhoon, El Nino, and volcano eruption. JAXA polar orbit satellite, Global Change Observation Mission-Climate (GCOM-C) launched in Dec. 2017 captured fine structures of red-tides and floating algae around Japan and the East China Sea by the 250-m spatial resolution. Polarimetry on GCOM-C showed clear aerosol distribution in the Southeast Asia by 1-km resolution. Meteorological geostationary satellite, Himawari-8, launched in Oct. 2014 showed dynamic features of ocean color and sea-surface temperature not only the clouds and aerosols in the Asia and Oceania region. The high temporal frequency (every 10 min for the full disk area) enabled us to see ocean color change (correspond to the ocean biological response) just after the typhoon and volcanic ash through gaps of the clouds and aerosols. The satellites sensors can observe only the ocean surface, and the ocean under clear-sky in the case of optical sensors. JAXA, JAMSTEC, and Nagoya Univ. are jointly investigating satellite ocean data assimilation around Japan, southeast Asia, and the western Pacific regions to produce no-gap 3-D information from satellites and other measurements. The geostationary and polar-orbiting satellite observation data and the assimilation data are expected to be objective data sources for policy making of the sustainable living environment in the Asia-Oceania region.