S5-07

New IMOS Himawari-8 and Multi-sensor Sea Surface Temperature products

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Sea surface temperature (SST) products within a few kilometres of coasts that can resolve fine-scale features, such as ocean upwelling, are increasingly in demand. The Australian Bureau of Meteorology (Bureau) currently produces operational, real-time SST from the Himawari-8 geostationary satellite every 10 minutes at ~2 km spatial resolution. For ease of use, these native resolution SST data have been composited to hourly, 4-hourly and daily SST products and projected onto the rectangular Integrated Marine Observing System (IMOS) 2km grid. In response to user requirements for gap-free, highest spatial resolution and highest accuracy SST data, the Bureau composites the geostationary Himawari-8 data with data from the Visible Infrared Imaging Radiometer Suite (VIIRS) and Advanced Very High-Resolution Radiometer (AVHRR) satellite sensors installed on polar-orbiting satellites to construct new "Geo-Polar Multi-sensor L3S" products on the IMOS grid. The compositing reduces data gaps due to clouds and presents an opportunity for easy-to-use, more gap-free SST data. The Himawari-8 data have been reprocessed back to the year 2015 and hourly, 4-hourly, and daily Himawari-8 SST products are available to users along with reprocessed Geo-Polar Multi-sensor SST products via the NCI (project qm43). The new Himawari-8 and Geo-Polar Multi-sensor L3S SST products are expected to provide improved data for applications such as IMOS OceanCurrent and the Bureau's ReefTemp Coral Risk Monitoring service, and studies of marine heatwaves and ocean upwelling in near-coastal regions. We will present validation of the Geo-Polar Multi-sensor L3S SST against in-situ SST data and demonstrate applications for the new products.