Why is the Sea Surface Temperature (SST) product important?

The SST product is useful for analyzing oceanic SST's. Air mass moisture and instability is affected by the SST. Tropical and Extratropical cyclogenesis development is significantly influenced by the SST. The higher temporal resolution will allow for researching diurnal variability, and any impact on sensible weather, given high temporal resolution.

Primary Applications:
• Hurricane Intensity
• Sea fog (air $T_d$ vs SST)
• Convection over the ocean
• Impact of onshore flow patterns on coastal county temperatures
• Large-scale climate information
• Ocean forecast models

Impact on Operations

Limitations

Missing data in cloudy regions: Retrievals are only made in clear sky conditions. Cloudy regions will have missing data.

Precision / accuracy: Although AWIPS cursor readout displays at 0.1 °C increments, the precision of the data is about 0.45 °C. The accuracy of the data is about 0.2 °C.
The GOES-16 SST agrees very well with the analysis at night, and shows a full disk average diurnal cycle of about 0.5°C. The instantaneous diurnal cycle, for each particular location and day, may reach 3 to 4 °C, depending upon local insolation and wind speed.

The relatively frequent temporal resolution of this product was designed to observe diurnal SST variations, which are typically greater in calm wind conditions.

Plot illustrates ocean depth (to 10 m) versus temperature (increasing to the right). Nighttime profile on left, daytime profile on right. Red dots indicate the depth at which SST observations from this product are valid (around 10 micrometers).

Image courtesy of NASA

Resources
ATBD on SST product

Hyperlinks not available when viewing material in AIR Tool