

# OCEAN OPTICS XXIV

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Poster Session 3

16:00–18:00

## Poster 262

### A GLOBAL ALGORITHM FOR THE RETRIEVAL OF SEA SURFACE TEMPERATURE FROM LANDSAT 8 TIRS IMAGE

Because of the high spatial resolution (30 m) and free access, Landsat 8 data have great potentials in illustrating coastal eddy, thermal plume contamination and water quality at fine scales. As such, there have been algorithms developed for the retrieval of sea surface temperature (SST) from Landsat 8 TIRS data. Such algorithms, due to its site-specific nature and narrow temperature range occurred at algorithm development, however, have limited applicability to other regions of the globe. This study attempts to establish a Landsat SST algorithm that is applicable to wider range of environments. Specifically, after compiling 670 in-situ Landsat-8 matchup data with SST ranging  $0^{\circ}$ ~ $35^{\circ}$ , 335 data points were employed to develop a relationship between Landsat channels 10/11 data and measured SST. For the other 335 points it is found that the retrieved SST from Landsat-8 agree with measured SST excellently, where the coefficient of determination ( $R^2$ ) is 0.98 and the root mean square error (RMSE) is 1.1. In comparison, the RMSE between MODIS and measured SST is 1.46 although the  $R^2$  value is also 0.98. These results highlight the global applicability of Landsat-8 data and algorithm for a fine-scale SST product, although further refinement in the future is envisioned.

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