Towards assimilation of ACSPO VIIRS SST in JPL Multi-scale Ultra-high Resolution (MUR) L4 analysis

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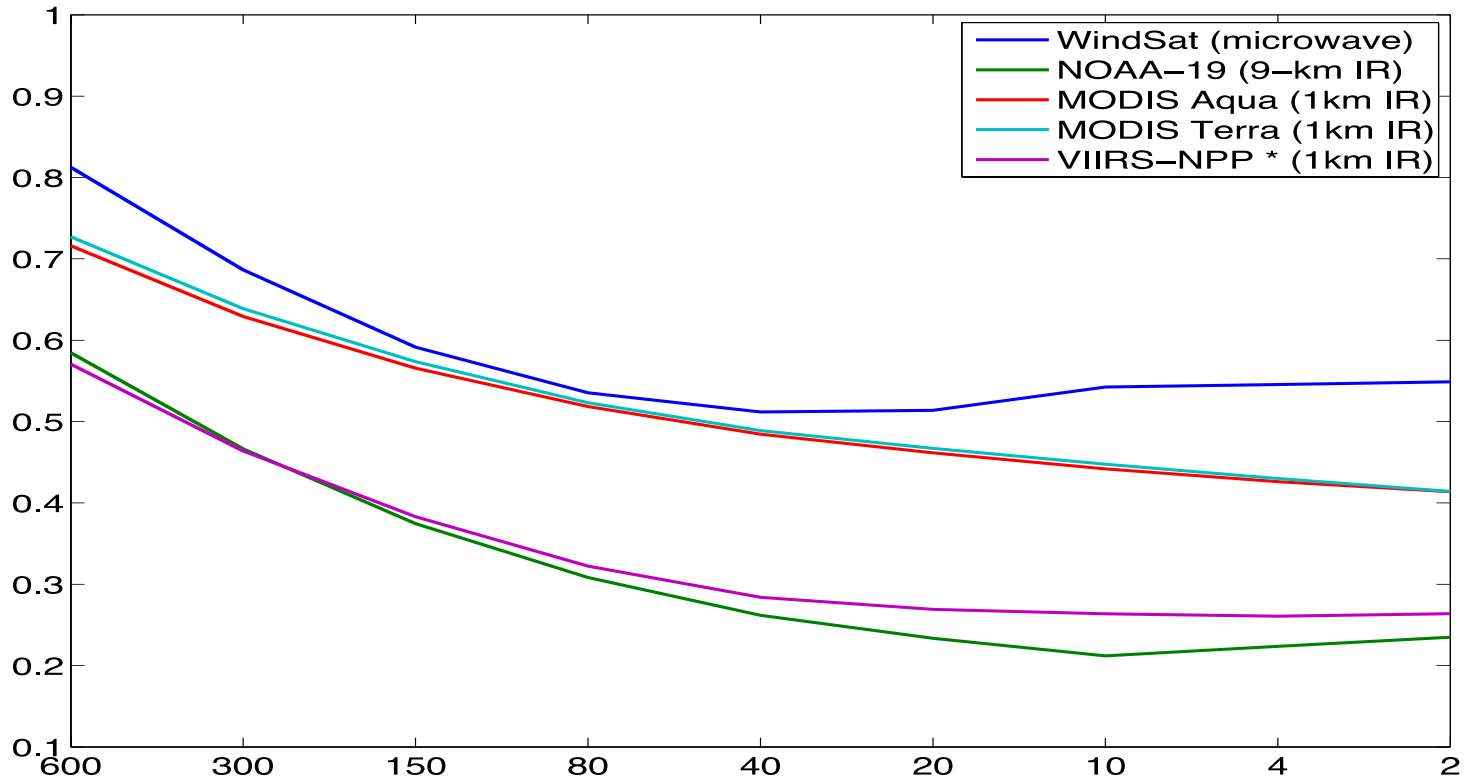
“MUR” Gridded SST Analysis

- *Multi-scale Ultra-high Resolution (MUR)* SST analysis uses a **1-km grid**.
- MODIS is the source of high-resolution SST retrievals; no VIIRS ingested at present.
- VIIRS is the **best option** for independent data to *validate* the **spatial patterns at fine scales**.
- MUR plans to ingest VIIRS in the future.



- Horizontal axis is the feature scale (resolution) of the MUR analysis.
- MODIS's RMS (red + light blue) decrease with the MUR resolution.
- VIIRS is the only data set *not* ingested by MUR in the plot.
- VIIRS's RMS (purple) also **decreases monotonically** with the MUR resolution, **cross-validating the fine scale features**.

VIIRS SSES usage potentials in MUR

- Use of *VIIRS v2.4 SSES Bias* improves agreement between MUR and VIIRS slightly (by 0.01^{o}C, globally averaged).
- If the *foundation/bulk temperature* can be estimated accurately (via SSES Bias), VIIRS data can be used as the reference for all other retrieval data sets in data-fusion/analysis operations like MUR.