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Some Early Results Assimilating ACSPO VIIRS L2P Datasets

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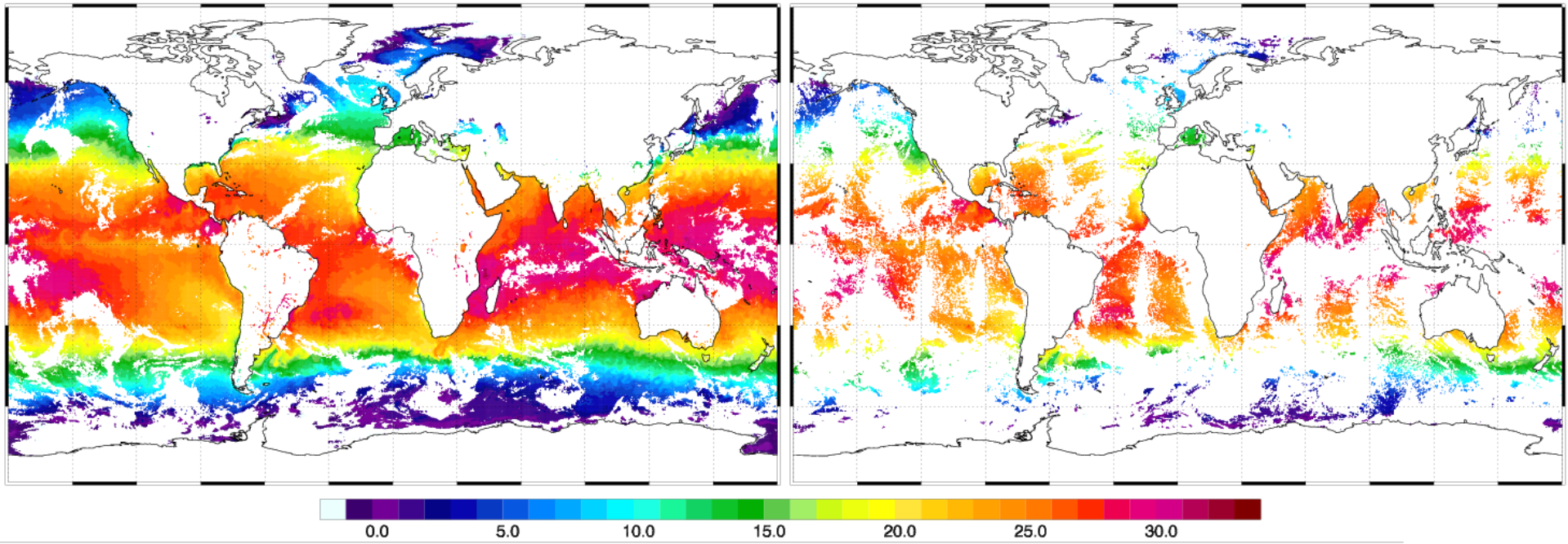
ACSPO VIIRS L2P Datasets

- Received courtesy of colleagues at STAR
- Two periods: 1 Jan. – 31 March, 2014 and 15 Aug. – 9 Sept. 2013
- Daily coverage is excellent with this product
- Experiments carried out assimilating VIIRS data only and VIIRS data in combination with other satellite products
- Rely on independent data from Argo floats to verify results
- Argo floats do not sample coastal regions or marginal seas

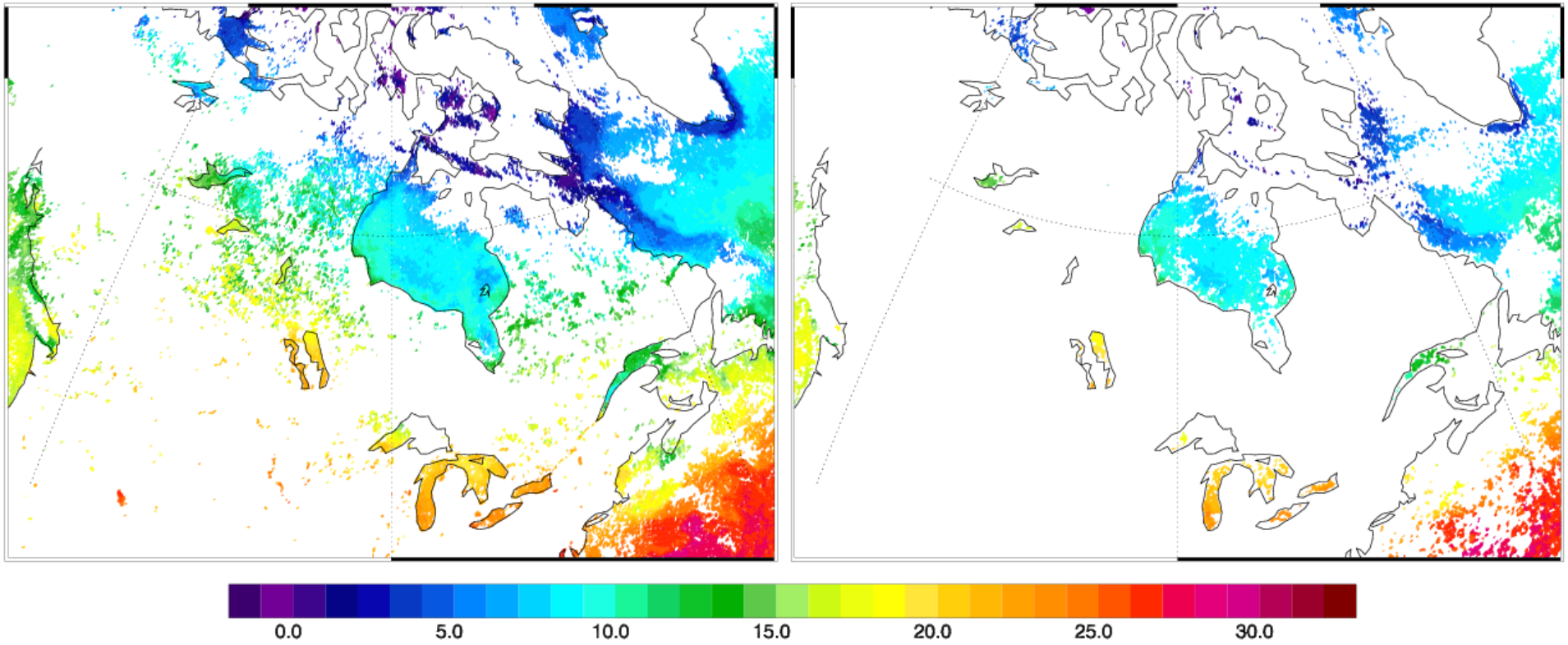
Coverage for 2014/02/01



ACSPO VIIRS

NAVO AVHRR19

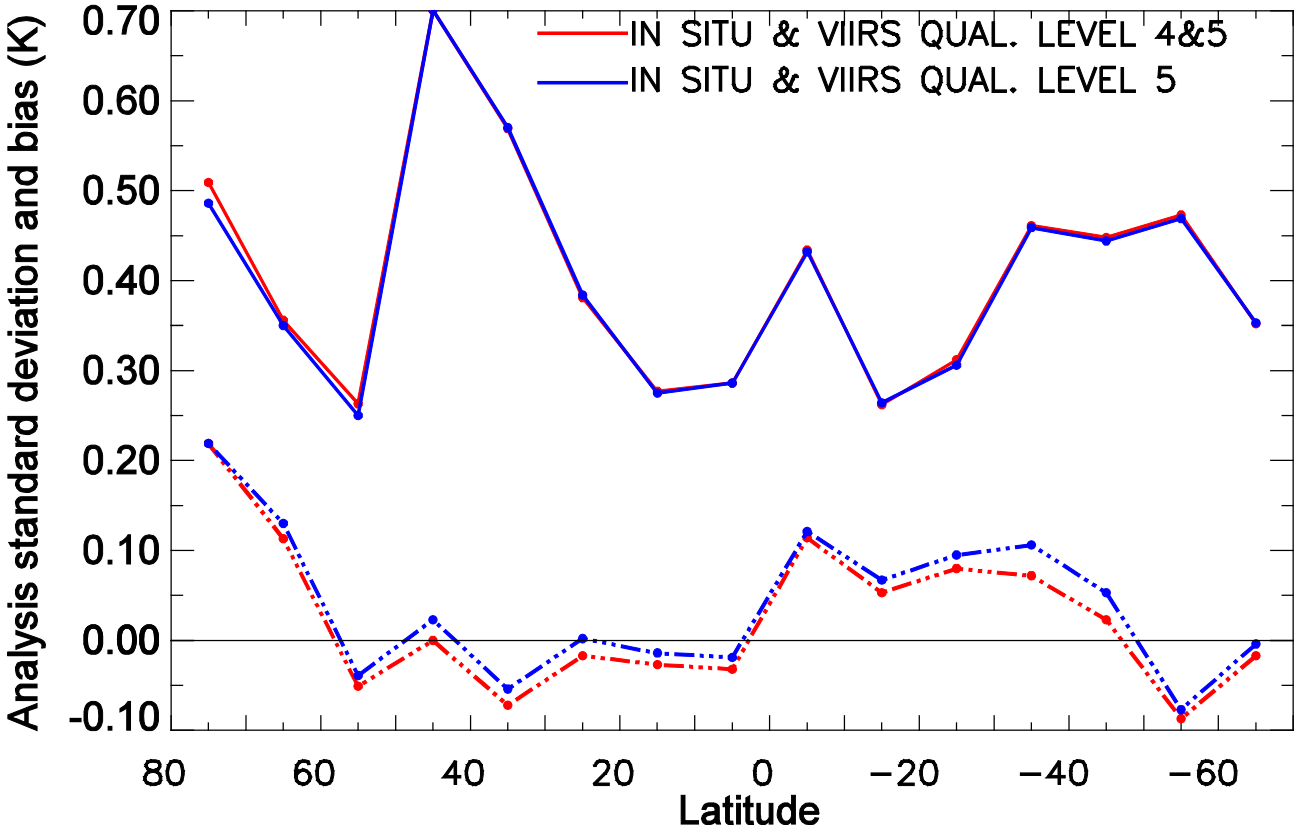
Coverage for 2013/09/01



ACSPO VIIRS

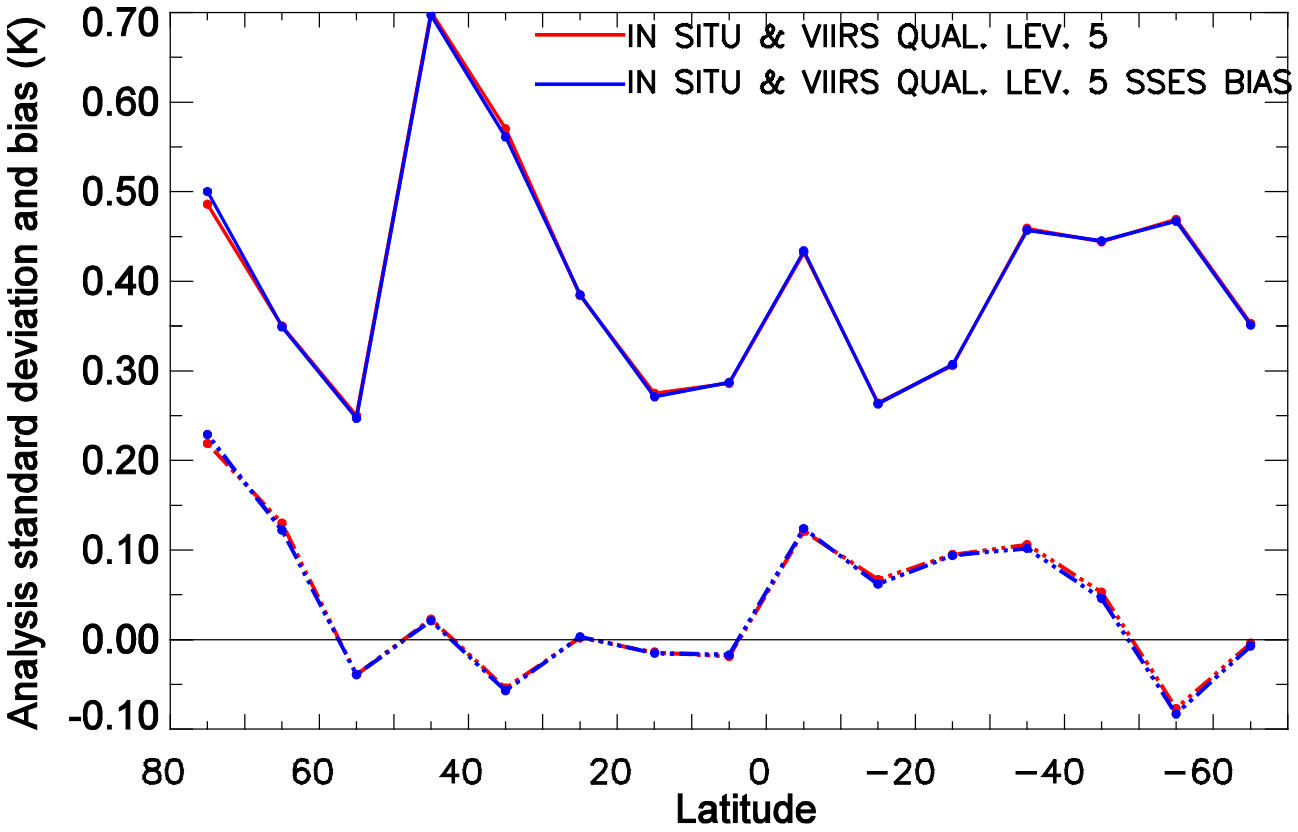
NAVO AVHRR18 & 19
and Metop-A combined

Assessing utility of the ACSPO quality level flag



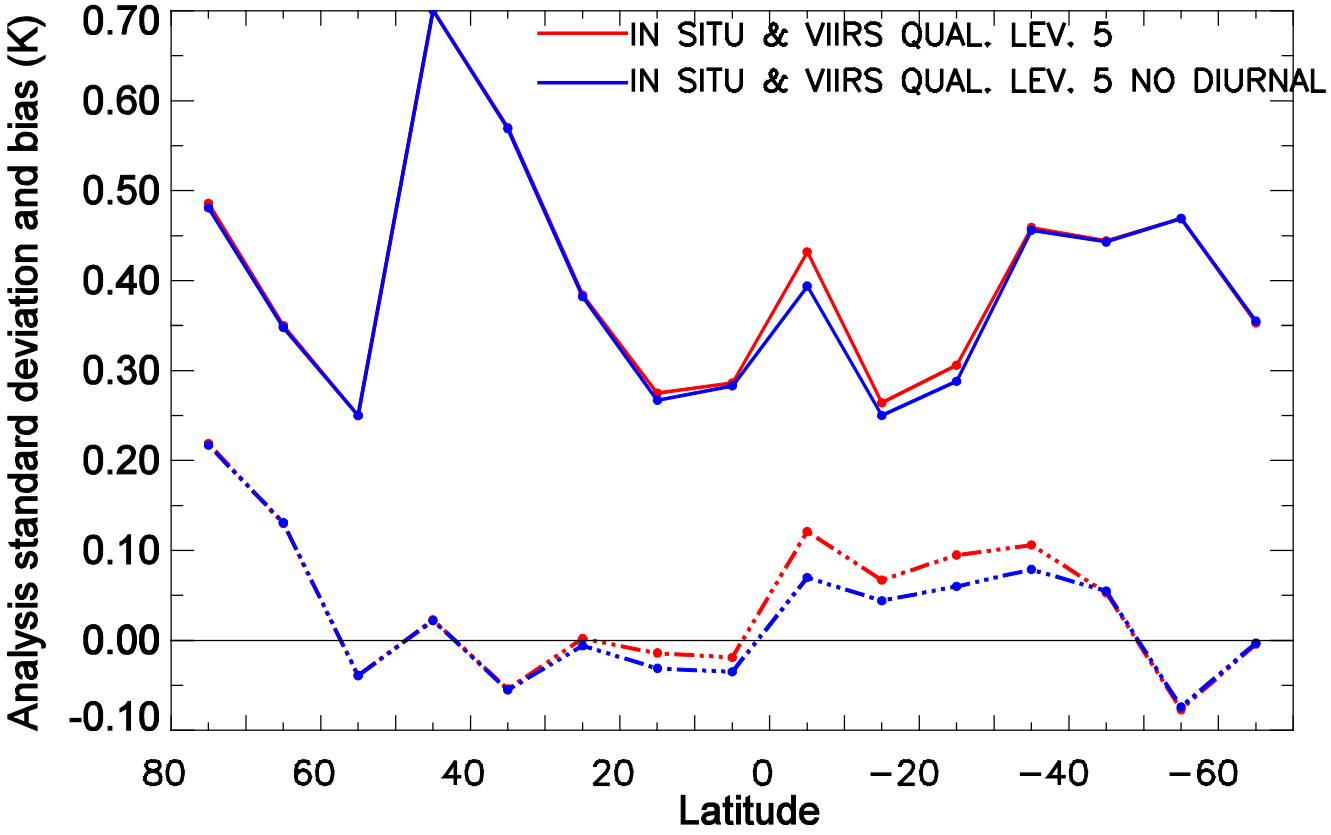
Including QL=4 leads to a small cold bias but does not affect the STD

Assessing utility of ACSPO SSES bias estimate



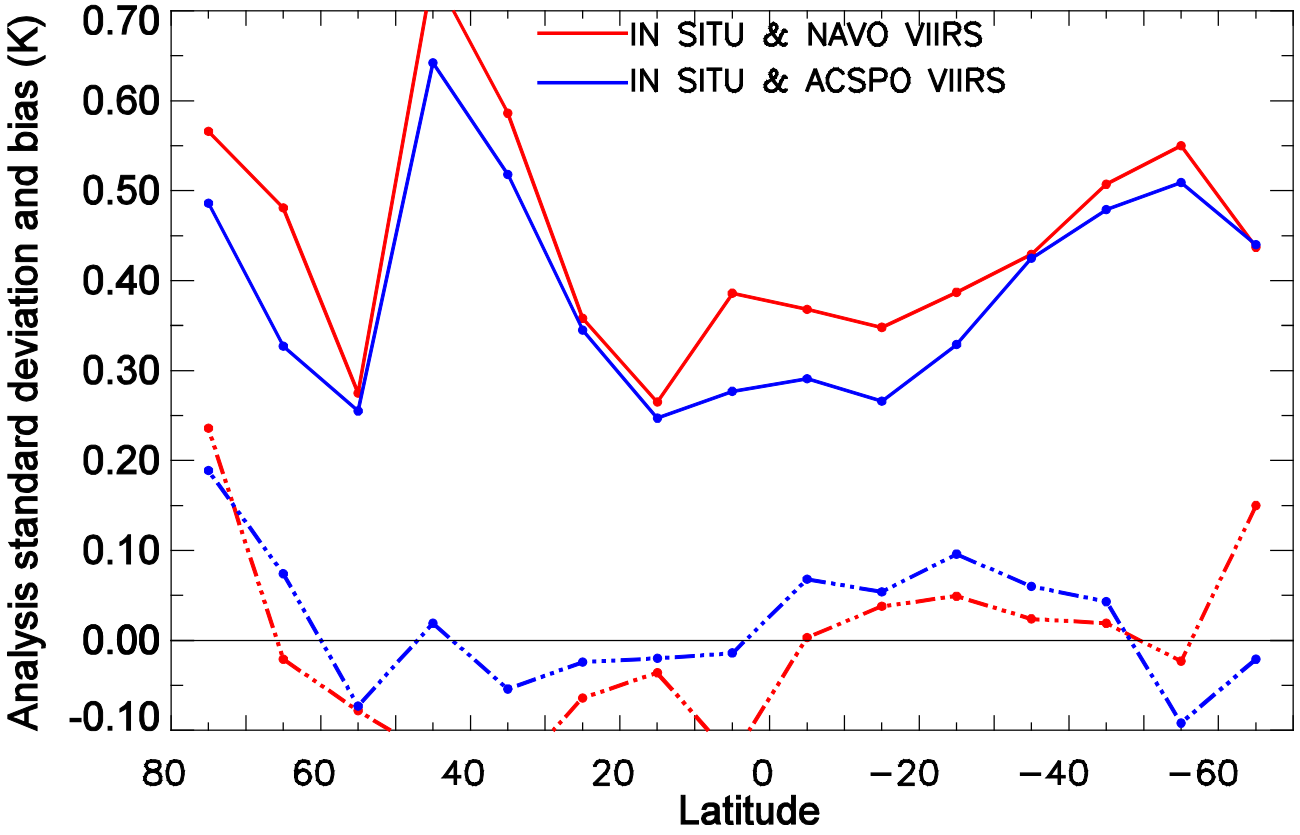
De-biasing VIIRS SST using ACSPO SSES bias does not affect assimilation

Assessing utility of screening daytime retrievals using L2P wind speeds



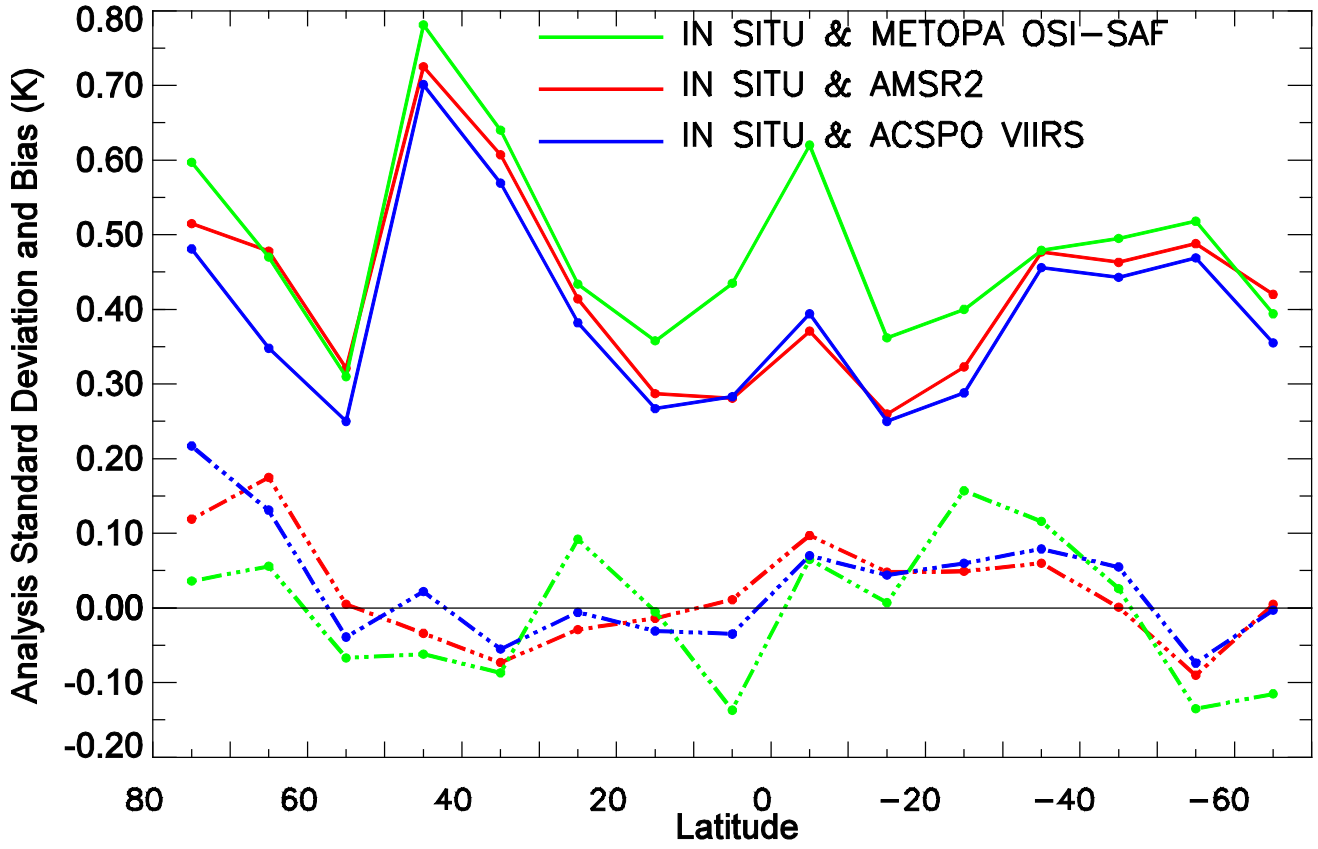
Using only daytime data with wind > 6m/s improves the assimilation

Assessing relative value of 2 VIIRS datasets: NAVO vs. ACSPO



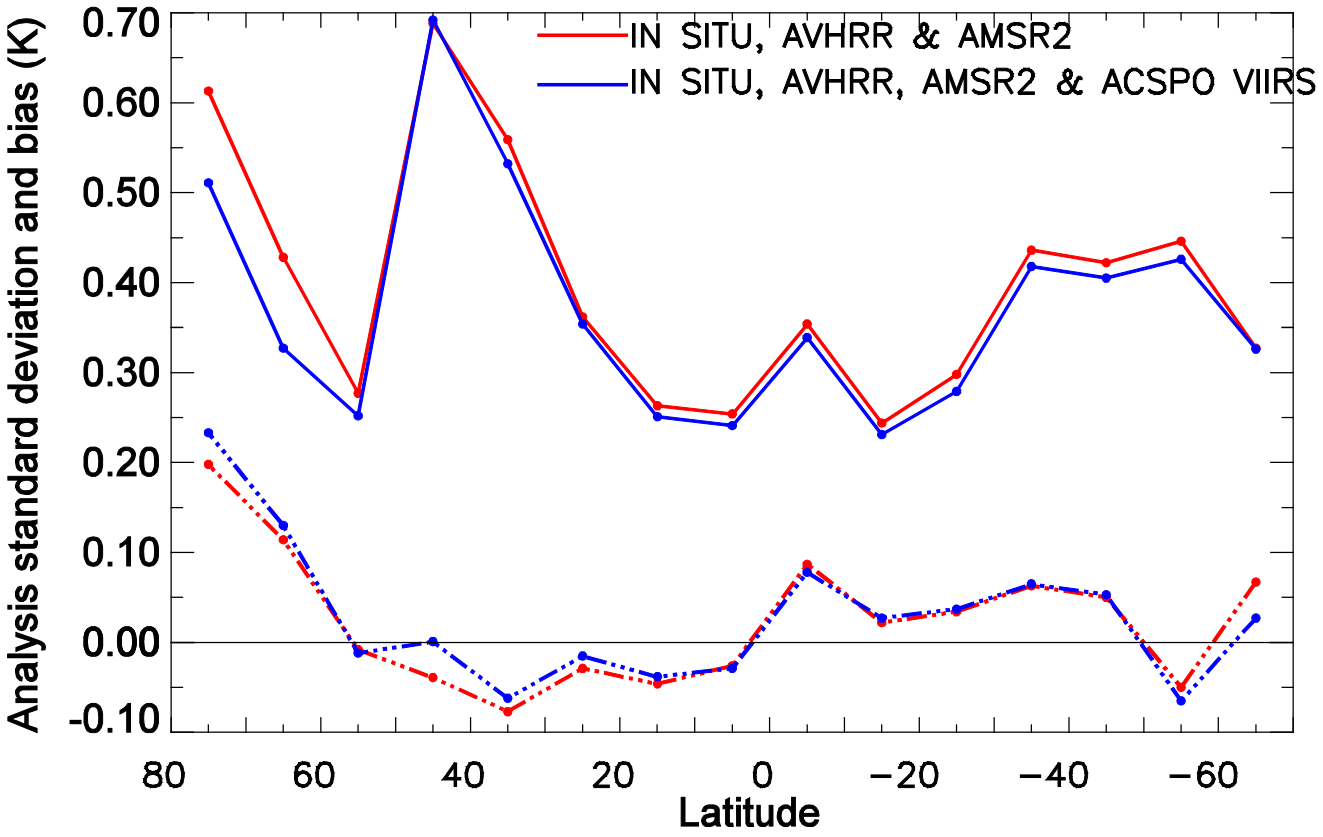
Using ACSPO instead of NAVO improves assimilation

Assessing the relative value of 3 datasets for January-March 2014



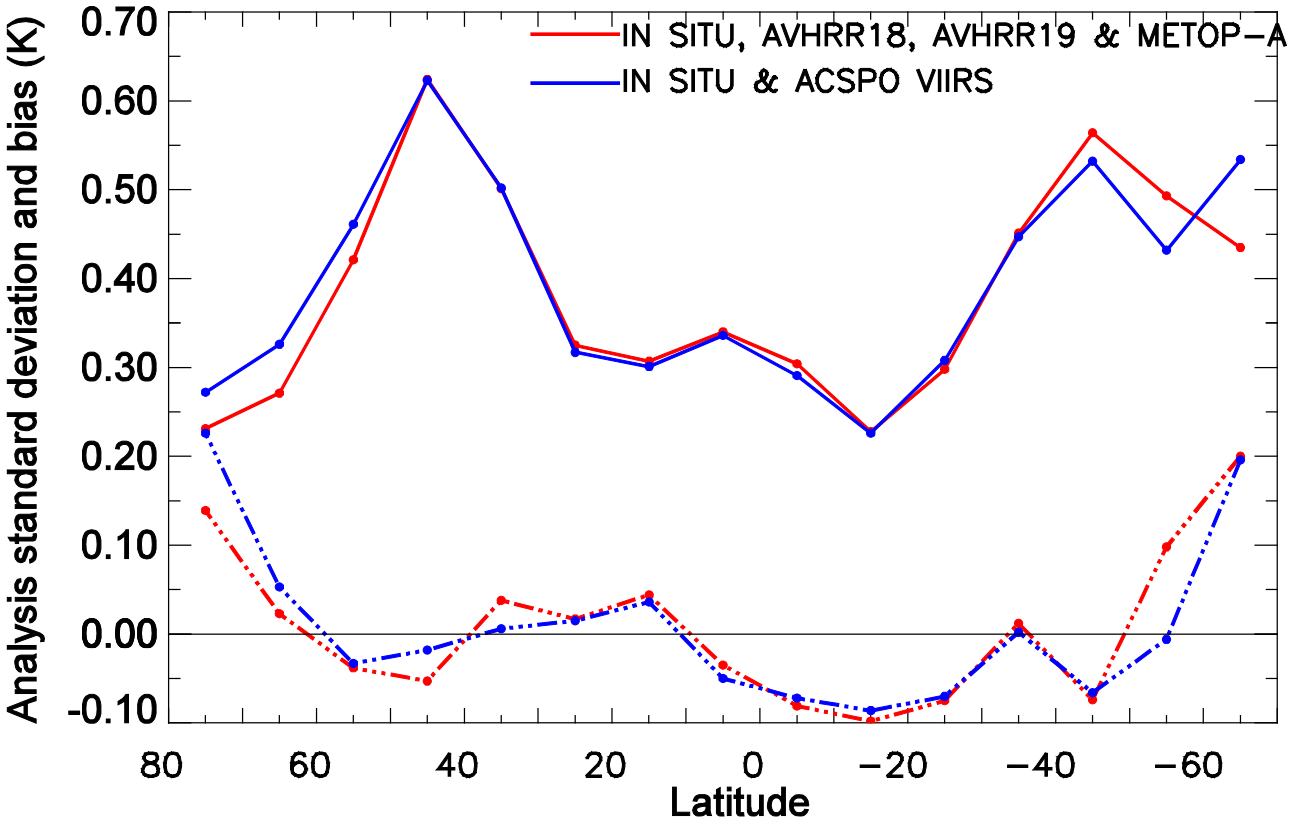
Using ACSPO improves STD in all LAT bands, except at 10°S

Assessing potential benefit of adding VIIRS to CMC analysis



ACSPO improves assimilation in all LAT bands, except hi-lat North (high bias)

Summer Sample: Aug. 15- Sept. 9, 2013. VIIRS vs. NAVO AVHRR GAC



ACSPO VIIRS assimilation comparable to NAVO AVHRR, except at hi-lat

Summary

- ACSPO VIIRS L2P is an excellent product
- Based on the January – March sample, VIIRS contains more information than either the OSI-SAF MetOP-A or the RSS AMSR2 datasets
- L2P ancillary information: quality level flags and wind speeds are useful but experiment with SSES bias estimates was inconclusive
- Current plan at CMC is to assimilate ACSPO VIIRS L2P dataset when it becomes available