

GHRSSST Satellite SST Validation Technical Advisory Group Report

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ST-VAL Breakout Session, 14th GHRSSST Science
Team Meeting, Woods Hole, 17-21 June 2013

Many thanks to Gary Corlett for guiding the ST-VAL Technical Advisory Group for all these years ...



Main activities since G-XIII

- Upgrading the *In Situ* SST Quality Monitor (*iQUAM*) – [Prasanjit Dash for Feng Xu](#)
- Validating VIIRS, METOP AVHRR and MODIS SST using SQUAM – [Prasanjit Dash](#)
- Validating VIIRSS SST using buoys, shipboard radiometers and SST analyses – [Peter Minnett](#)
- High latitude validation of satellite SST using an ISAR radiometer (DMI)

Main activities since G-XIII cont.

- Multi-Sensor MMD for ESA SST_CCI – [Gary Corlett](#)
- Development of Felyx System capable of validating satellite SST – [Jean-Francois Piolle](#)
- Improving SSESs for AVHRR L3U, L3C and L3S products – [Helen Beggs for Chris Griffin](#)
- Comparisons of CMS and NOAA blacklists of *in situ* SST observations (OSI-SAF NOAA meeting at CMS)
- Inter-sensor Bias Estimation in SST (BESST) (Uni of Liege/GHER and Meteo-France/CMS)

iQuam Summary

- ***iQuam v1: Remained Fully Functional***
 - ✓ Performing QC in NRT
 - ✓ Trending QCed data on the web
 - ✓ Serving data to users (used in SQUAM)
 - ✓ Manuscript submitted to JTech

- ***iQuam v2: Under Development / Testing***
 - ✓ **Add ARGO Floats**
 - ✓ Add CMS & UK MO black lists as separate QFs
 - ✓ Extend time series back to ~1980
 - ✓ Regenerate full *iQuam* record off ICOADS



Maps

[Statistics](#)
[Time Series](#)
[Platforms](#)

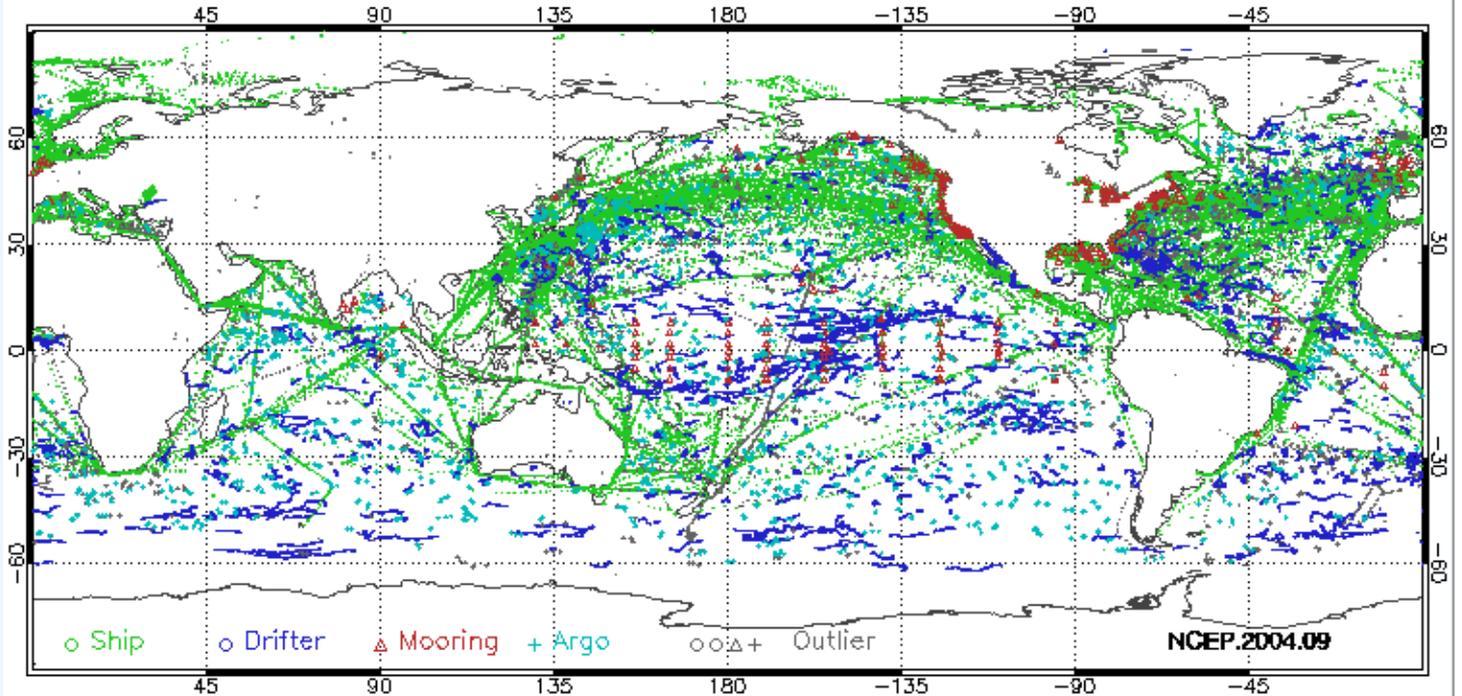
Global map of measurements

 09 2004

Different platform types are shown in different colors, with outliers (erroneous observations) shown in gray. Each symbol stands for one observation.

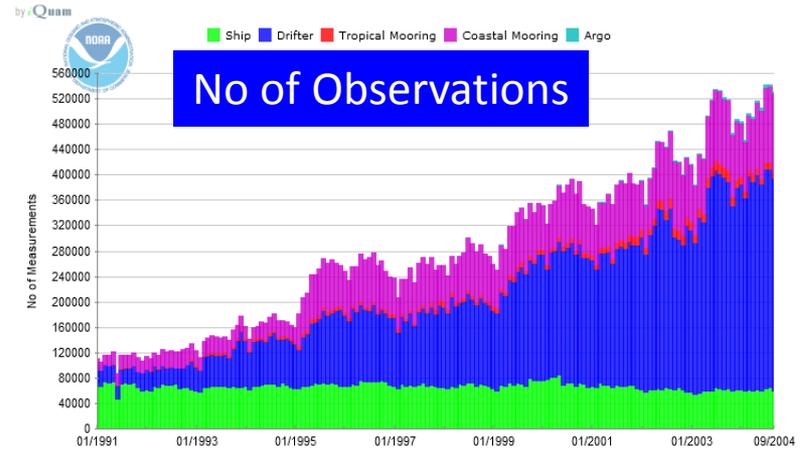
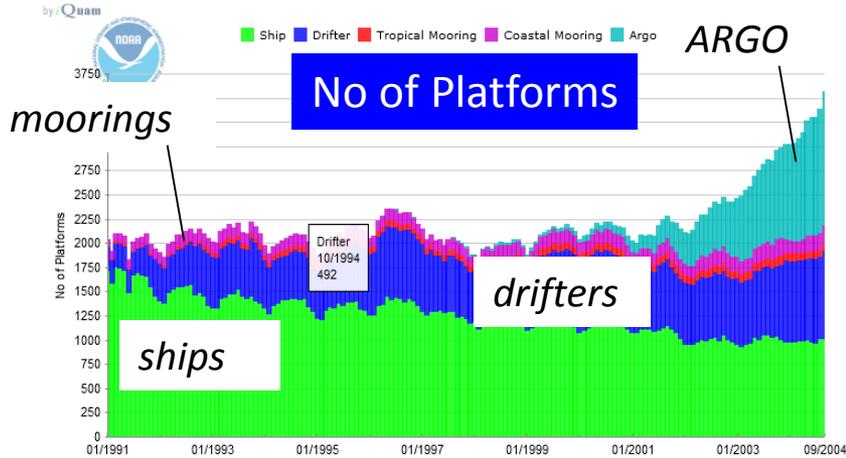
Tropical moorings include TAO/TRITON, PIRATA, RAMA etc. Coastal moorings are all other moorings.

Argo floats data are from USGODAE GDAC ftp site. The shallowest good measurement in 3-8dbar depth range is extracted from each profile.

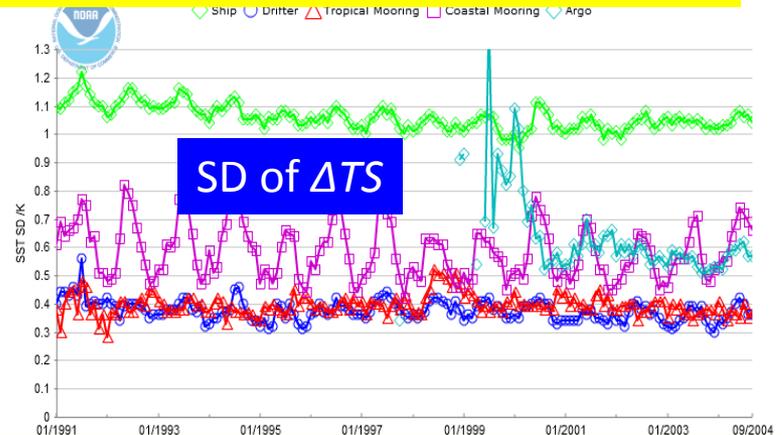
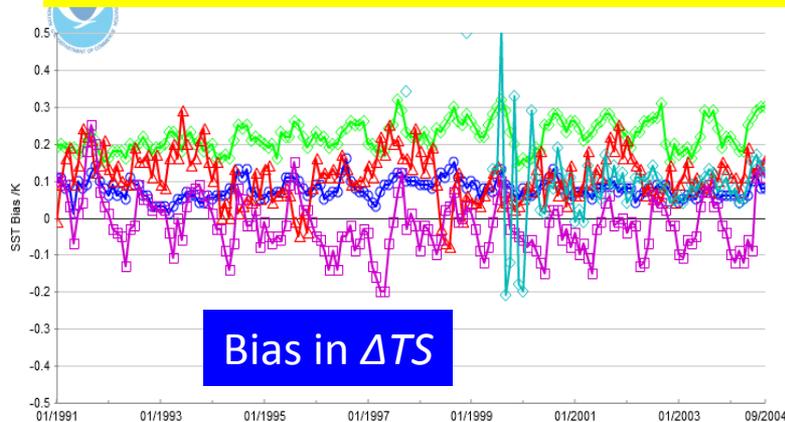

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ARGO has the most uniform global coverage

Time Series of Monthly Statistics (1991-pr)



ARGO has more platforms but smallest number of observations



**ARGO compare w/Reynolds less favorably than drifters or tropical moorings
– Reynolds assimilated drifters but not ARGO floats?**

ST-VAL Issues to be discussed

- Future of GHRSSST MDB, MMDB and HR-DDS
- A virtual constellation of shipborne SST radiometers?
- Validation Protocol Document (VPD)
- Approach for assessing resolution of products
- SSESs:
 - Are they being calculated correctly?
 - Are they being applied correctly?
 - Are they really appropriate?

Should users apply the SSES bias correction?

Test: GAMSSA input data with and without applying SST = SST - SSES_bias_error for 1 Jan - 30 Apr 2013

Some improvement to NAVO GAC AVHRR SST biases but deterioration of REMSS WindSat SST bias

Recommendation: L2P/L3 producers provide guidelines for how to apply SSES statistics

