

HRSST Task Team

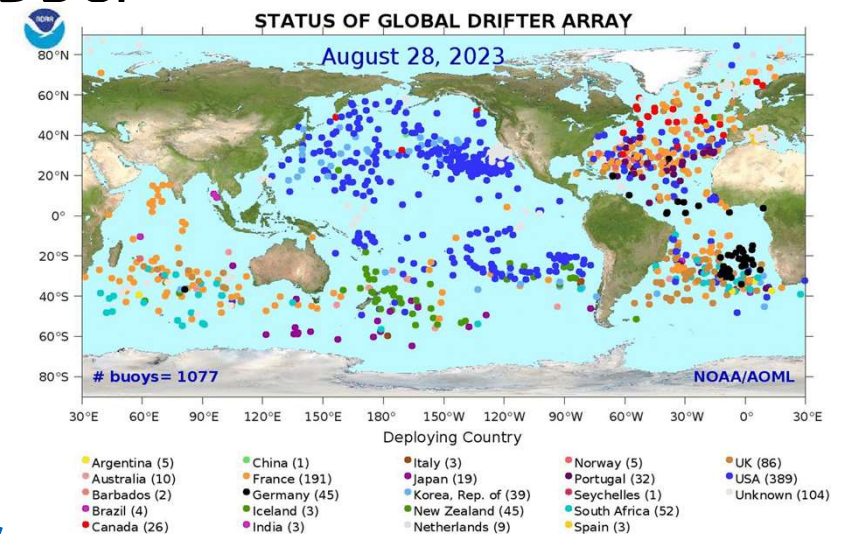
Chair: Gary Corlett

Co-chair: -

Presenter: -

GHRSSST/DBCP Pilot Project

- Reference data, such as drifting buoys, are essential for satellite SST validation
- Majority of drifters provided by the NOAA Global Drifter Program (GDP) and coordinated by the JCOMM DBCP
- Estimated uncertainty of drifters was 0.1 K
 - However many studies suggested drifter uncertainty was closer to 0.2 K



<https://www.aoml.noaa.gov/phod/gdp/>

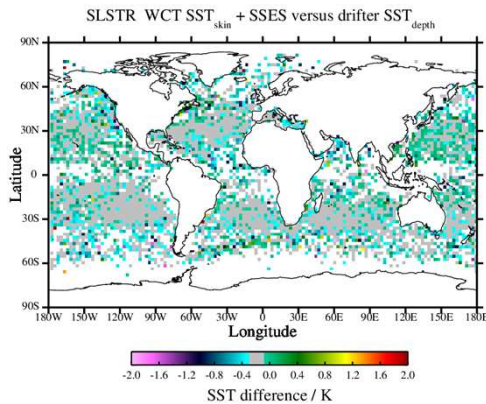
GHRSS24/DBCP Pilot Project

- A number were upgraded to a higher specification
 - Position accuracy and reporting to 0.01degrees (**HRSST-1**)
 - SST accuracy < 0.05K; reporting to 0.01K (**HRSST-2**)
 - Total standard uncertainty in measured SST to be < 0.05K
- Requirements
 - Hourly measurements
 - Report design depth in calm water to ± 5 cm
 - Report of geographical location to ± 0.5 km or better
 - Report of time of SST measurements to ± 5 minutes
- Endorsed at GHRSS24 2013

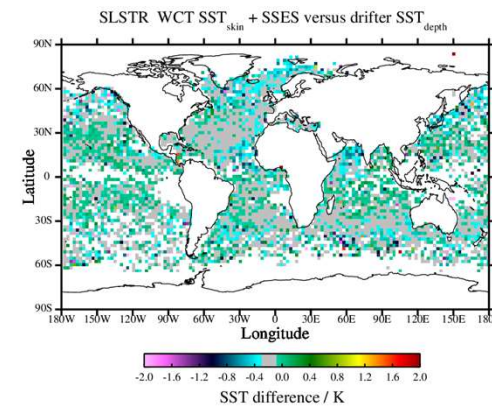
Objective of the task team

- To coordinate HRSST drifter activities with the drifting buoy community
- Current focus is on HRSST-2 drifters (not FRM)

Non-HRSST-2



HRSST-2



Example match-up results comparing Copernicus SLSTR-A SST_{skin} to drifter SST₂₀



Current members

Anne O'Carroll, Igor Tomazic, Luca Centurioni, Verena Hormann, Gary Wick, Sandra Castro, Helen Beggs, Chris Merchant, Jean-Francois Piolle, Craig Donlon, David Meldrum, Stéphane Saux Picart, Shane Elipot, Peter Minnett



Danmarks Meteorologiske Institut



Current workplan

- Continued performance evaluation of HRSST2 drifters
 - Preliminary list of HRSST2 drifters defined in collaboration with GDP -> **Iridium and not Dbi**
 - This is simply because Dbi calibration < 0.05 K has not yet been confirmed and does not imply any data quality issues with Dbi drifters
- Refine minimum metadata standard with GDP
 - See next slides)

Minimal drifter metadata specification

1. WMO #
2. Sat ID #
3. Drifter type (a simplified version)
4. Manufacturer
5. Date of production
6. Date of deployment
7. Satellite telemetry system
8. Date of drogue off (estimated)
9. Thermometer manufacturer
10. SST reporting resolution
11. GPS reporting resolution
12. SST accuracy
13. SST calibration traceability, if any...
14. T sensor drift
15. Buoy firmware version
16. SST sensor depth
17. Programme identification
18. Pre-deployment calibration date (sensor)
19. Drogue depth

Plan for 2023/2024 and 2024/2025

- 2023/2024
 - Complete assessment of HRSST-2 Performance
 - Finalise minimal drifter metadata specification for GHRSS24 needs
 - Write journal article

Expected deliveries

- 2023:
- 2024: Journal Article
- 2025:
- Expected date for closing the task team: GHRSSST 25

Social media channels

Is there any LinkedIn/Mastodon/Twitter/X profile GHRSS24 should be connecting to?

Achieved deliveries

List of deliveries in open access:

- High-resolution Sea-Surface Temperature (HRSST) drifting buoys for satellite SST Workshop Report
 - <https://www.cls-telemetry.com/trusted-hrsst-drifting-buoys-for-satellite-sst-workshop-report/>
- Report to DBCP 37
 - <https://oceanexpert.org/document/29267>