RDAC update: Met Office

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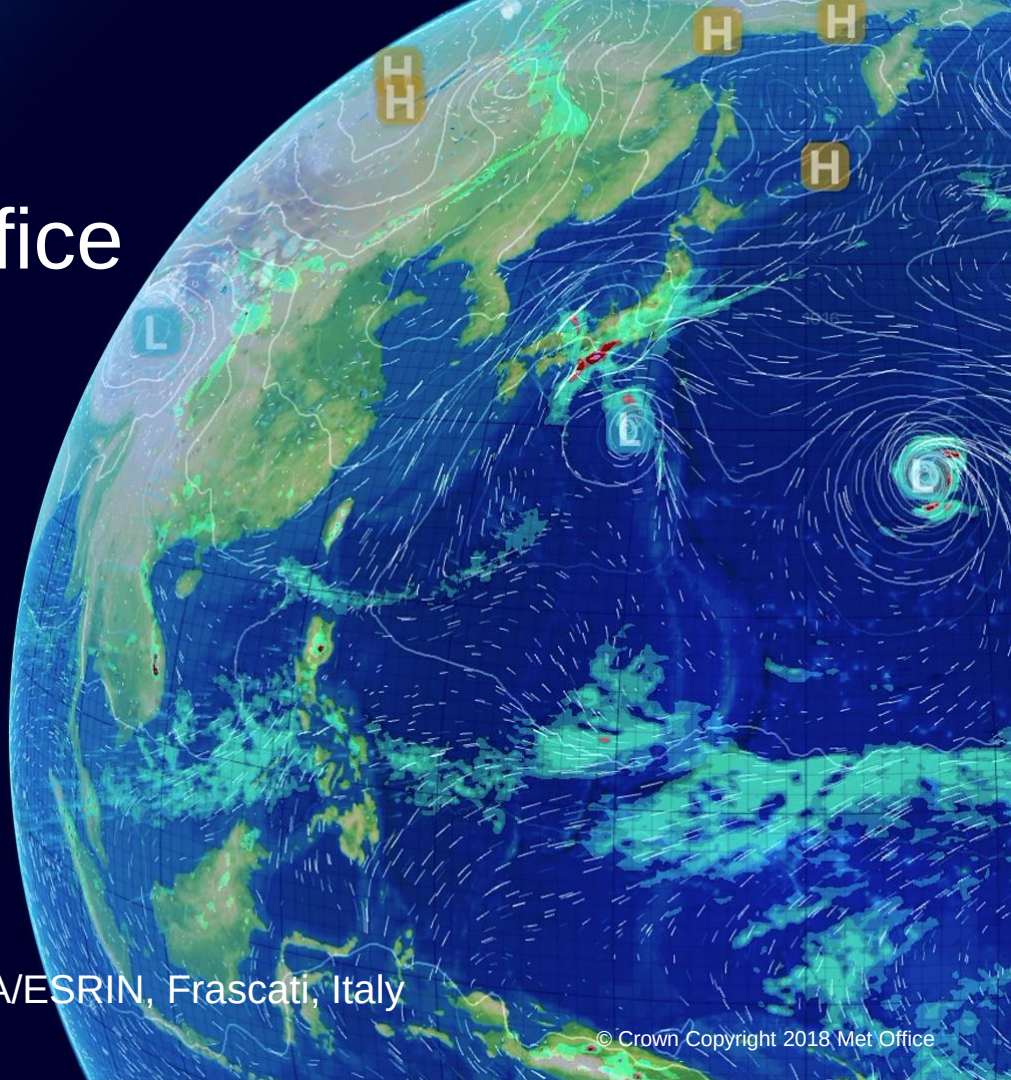

GHRSST XX Science Meeting, 3 – 7 June, ESA/ESRIN, Frascati, Italy

Introduction to Met Office GHRSST products

- Near real time products
- Reprocessed products

Near real time GHRSST datasets

- **OSTIA (Operational SST and Ice Analysis)**
  - L4, global, daily, foundation SST product; ingests GHRSST L2/L3 and in situ data.
  - Estimates of biases in satellite input data.
  - Seasonal and monthly mean products.
- **GMPE (GHRSST multi-product ensemble)**
  - Daily ensemble of global SST analyses, ingests L4 analyses (mostly in GDS format).
  - Includes median and standard deviation of the ensemble + anomaly and gradients of each analysis.
- **Diurnal skin SST**
  - Global, daily, hourly average skin SST; ingests GHRSST L2/L3 satellite data.
- All are available from CMEMS (GDS v2)
- OSTIA L4 foundation analyses are also available from PO.DAAC (GDS v1 and v2)

Reprocessed datasets

- **OSTIA**
  - ESA SST CCI / C3S climate dataset (20 cm depth daily average) – see presentation by Owen Embury for further details.
    - ✓ Includes a reprocessed GMPE product.
  - CMEMS reprocessing to provide a long data record that is equivalent to the OSTIA near real time products (foundation SST).
    - ✓ Current product covers 1985-2007 and is available from CMEMS.
    - ✓ **A new version (to cover 1982 – 2018 and onwards) is currently in production** (will be available by the end of the year).
- **Climate datasets (not GDS formatted)**
  - HadISST - Hadley Centre Sea Ice and Sea Surface Temperature data set
  - HadSST - Hadley Centre SST data set
  - HadIOD – Hadley Centre Integrated Ocean Database
  - Available through the Met Office Hadley Centre Observations website

Met Office

Main activities since last science team meeting

- Upgrade of foundation analyses to improve feature resolution and incorporate Sentinel 3A SLSTR
- Preliminary investigation into use of SLSTR as a reference sensor (see poster 37)
- Testing of NOAA20 VIIRS and Sentinel 3B SLSTR for inclusion in OSTIA in the future
- Work on a reprocessed OSTIA dataset for CMEMS, and on the climate datasets from the ESA SST CCI and C3S projects (see presentation by Jacob Hoeyer and posters 22 & 56)

Improved feature resolution

On March 12 2019, the OSTIA foundation SST processing system was upgraded to improve its feature resolution and incorporate Sentinel 3A SLSTR data

The methods to improve feature resolution were developed as part of ESA SST CCI

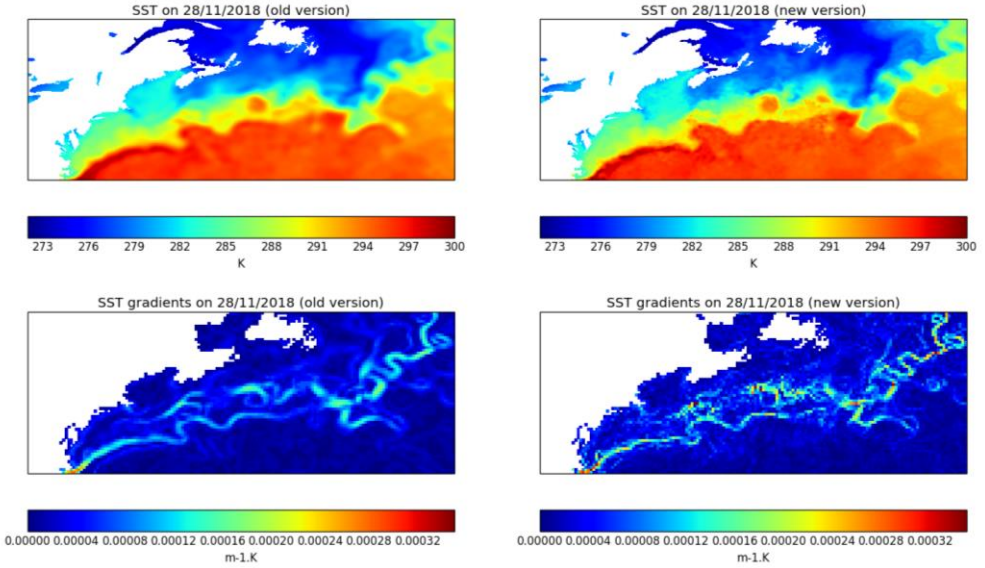

Fig I.1 page 8,CMEMS user manual http://resources.marine.copernicus.eu/documents/PUM/CMEMS-SST-PUM-010-001.pdf

Further details see Fiedler et al., 2019: **Improvements to feature resolution in the OSTIA sea surface temperature analysis using NEMOVAR assimilation scheme**, *submitted to QJRMS*

Data availability

- CMEMS - marine.copernicus.eu
- PO.DAAC - podaac.jpl.nasa.gov
- ESA SST CCI - cci.esa.int/data
- Met Office Hadley Centre Observations HadObs: www.metoffice.gov.uk/hadobs (need to contact us for some of the data)

Future of GHRSST

How do we adapt to meet the changing needs of users e.g. coupled NWP; climate users?

- Coupled NWP may want to develop methods to assimilate radiances instead of SSTs but may still need validation datasets.
- Climate users could want uncertainty information presented in different ways to what we do now (e.g. ensembles) and have datasets in files that are easy to compare to model data.