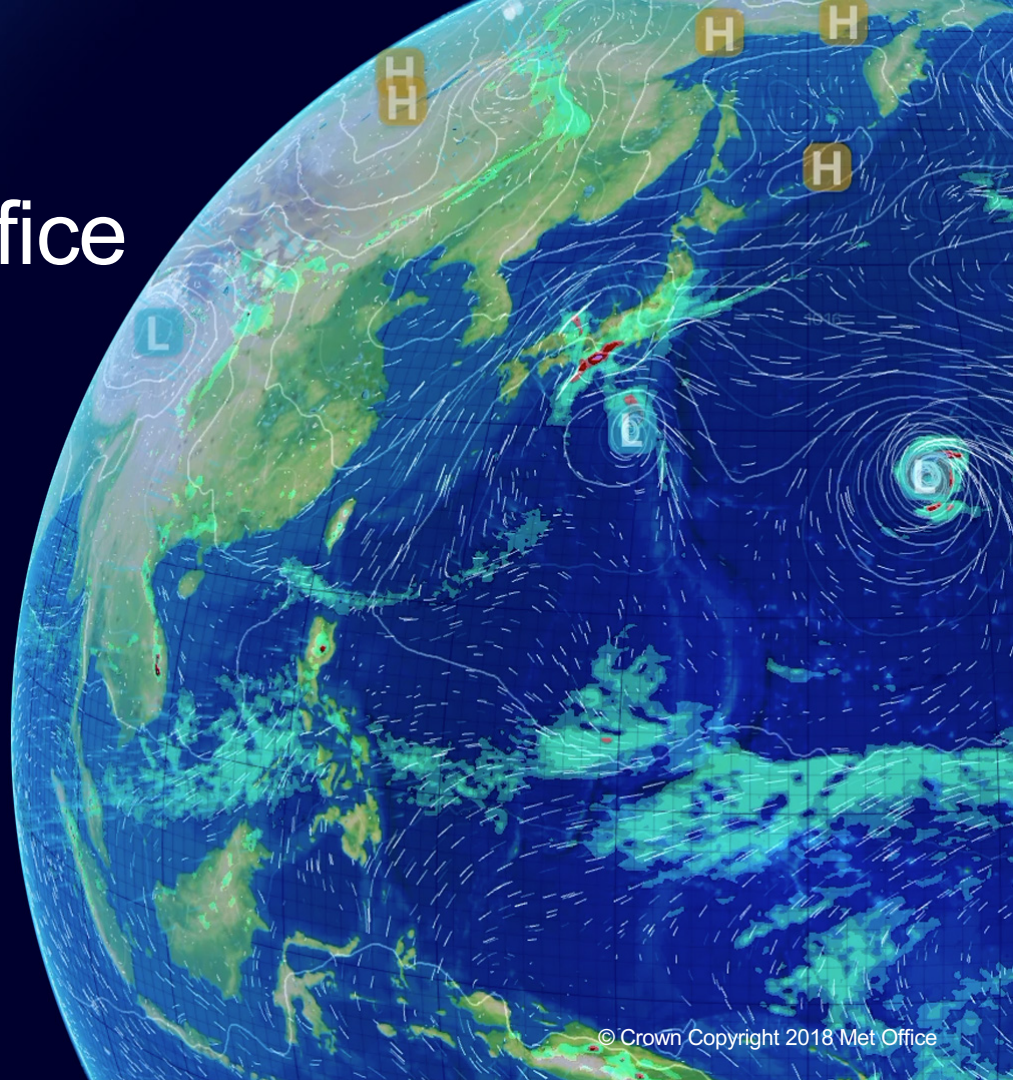


# RDAC update: Met Office

Simon Good

4 June 2018, GHRSSST XIX



# Introduction

- Near real time dataset production
- Reprocessed dataset production
- Use in ocean prediction

# Near real time GHRSSST datasets

- **OSTIA (Operational SST and Ice Analysis)**
  - L4, global, daily, foundation SST product; ingests GHRSSST L2/L3 and in situ data.
  - Estimates of biases in satellite input data.
  - Seasonal and monthly mean products.
- **GMPE (GHRSSST 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 GHRSSST L2/L3 satellite data.
- All are available from CMEMS (GDS v2)
- OSTIA L4 SST and ice analyses are also available from PO.DAAC (GDS v1 and v2)

# Production - reprocessed datasets

- **OSTIA**

- MyOcean reprocessing, 1985-2007; available from CMEMS.
- ESA SST CCI reprocessing, (20 cm depth) 1991-2010; available through ESA CCI data portal.
  - Includes a reprocessed GMPE product.
- Both are/will be updated and made available during the next 1-2 years.

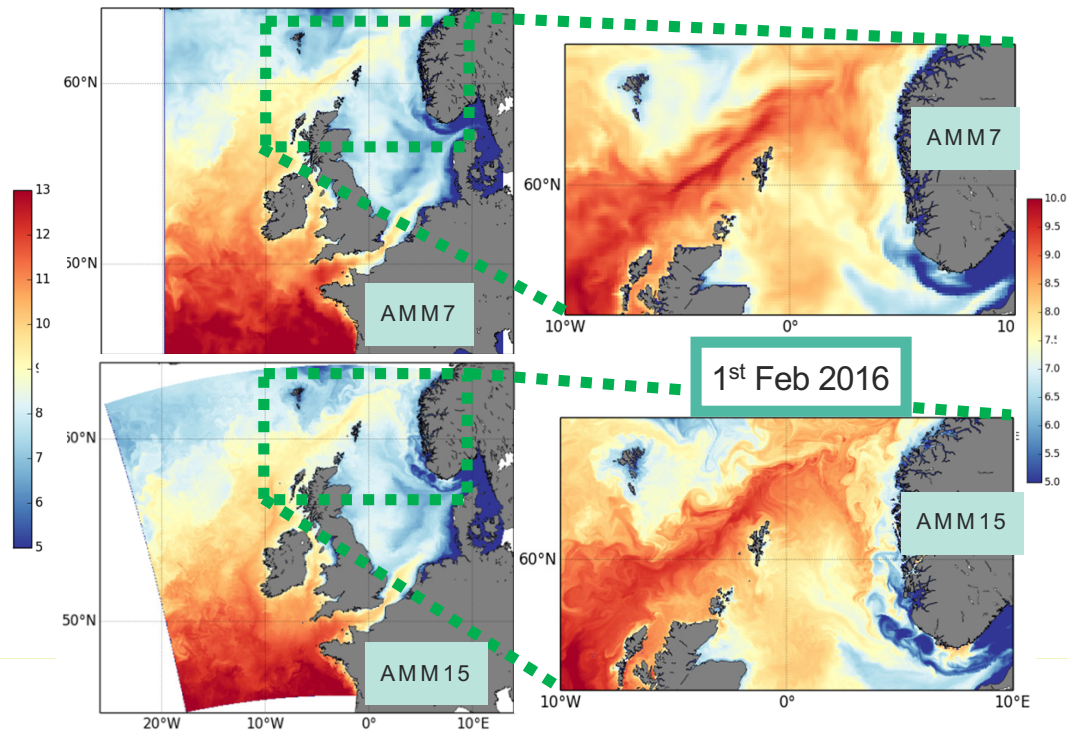
- **Climate datasets (not GDS formatted)**

- 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

# Use of data in our ocean prediction systems (Rob King and Matt Martin)

- A new operational shelf-seas configuration is being developed at 1.5km resolution (our current operational shelf-seas system is at ~7km).
- The system assimilates L2p SST data from GHRSSST as well as SLA (in deeper waters) and T/S profile data.
- Assessment of the first implementation of DA in AMM15 has similar short-range forecast accuracy to AMM7, while maintaining the high resolution model information.
- Longer experiments of this system are currently being run and assessed.
- This system is expected to be made operational later in 2018.

## Data assimilation at 1.5km resolution

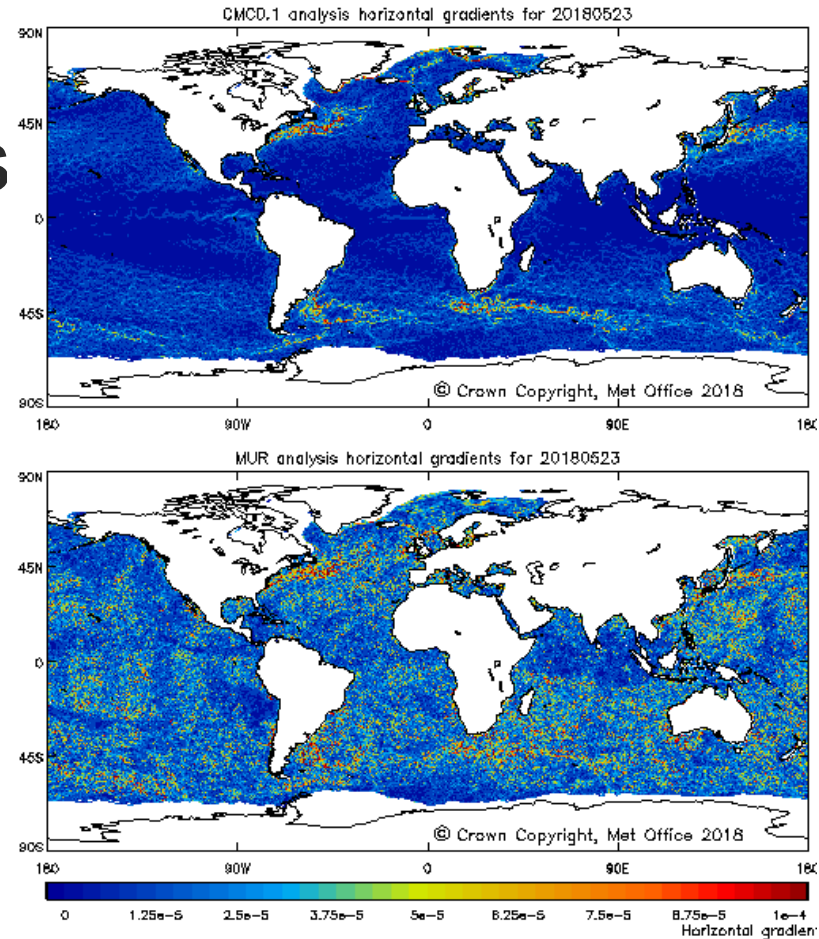


# Main activities since G-XVIII

- Upgrade to OSTIA foundation SST and sea ice analyses
- Update to GMPE
- SLSTR monitoring

# OSTIA and GMPE upgrades

- OSTIA foundation analysis system was upgraded to use the NEMOVAR variational data assimilation scheme (February 2018)
  - Includes improvements to SST feature resolution (ESA SST CCI), SST under ice
  - Sea ice concentrations produced using an analysis instead of simple regridding
  - Positive impact on Met Office NWP
- GMPE expanded to include space for new/updated analyses (September 2017)
  - DMI OI, MUR, [G1SST], OSPO, CMC 0.1°.



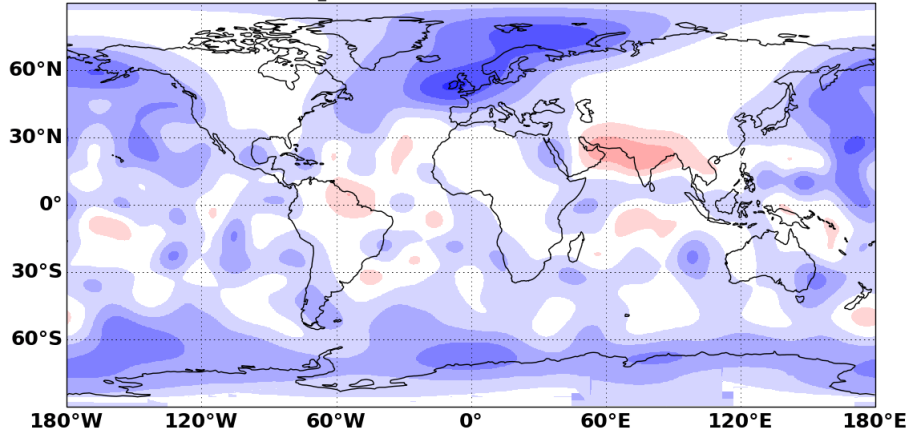
# Monitoring SLSTR data in the OSTIA system (Chongyuan Mao)

- Assimilating SLSTR data has neutral impact on OSTIA system, as shown in observation minus background (O-B) statistics and compared to independent Argo observations
- The statistics from a system using all SLSTR data and a system using only dual-view data are comparable, with the dual view system having slightly better O-B statistics
- SLSTR shows closer agreement with the OSTIA reference compared to other data types; some differences e.g. in the Northern Hemisphere and tropics
- Future work
  - Assimilate SLSTR dual view data operationally
  - Test using SLSTR dual view data as part of the reference dataset in OSTIA



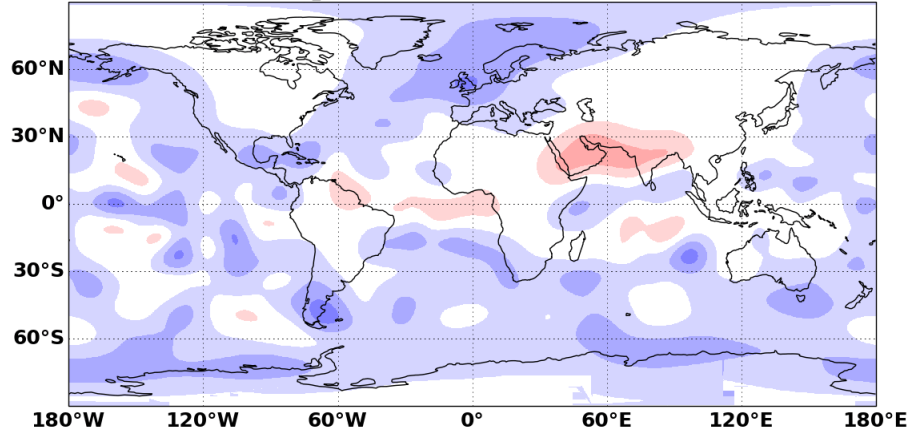
# Monitoring SLSTR data in the OSTIA system (Chongyuan Mao)

SLSTR\_ALL bias to OSTIA reference, 20180301, (K)

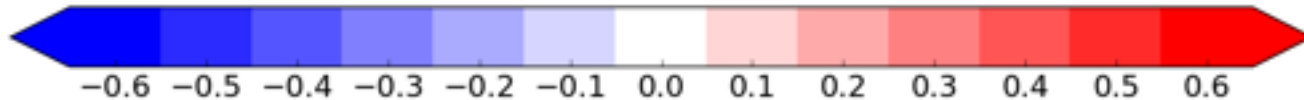


+SLSTR\_ALL

SLSTR\_DUAL bias to OSTIA reference, 20180301, (K)



+SLSTR\_DUAL



Daily bias estimates are removed from the data; smaller biases indicate that the data type is closer to the reference dataset (i.e. nighttime VIIRS and in situ data)

# Where to go for data access

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

# Issues to raise / point of information

- ESA SST CCI phase 2 data has changed 'analysis\_error' variable in the L4 files to 'analysis\_uncertainty' so that the name better represents the data i.e. departs from the GDS.

# Thanks for listening – any questions?

For more information please contact



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