

OSI SAF MSG/SEVIRI activities

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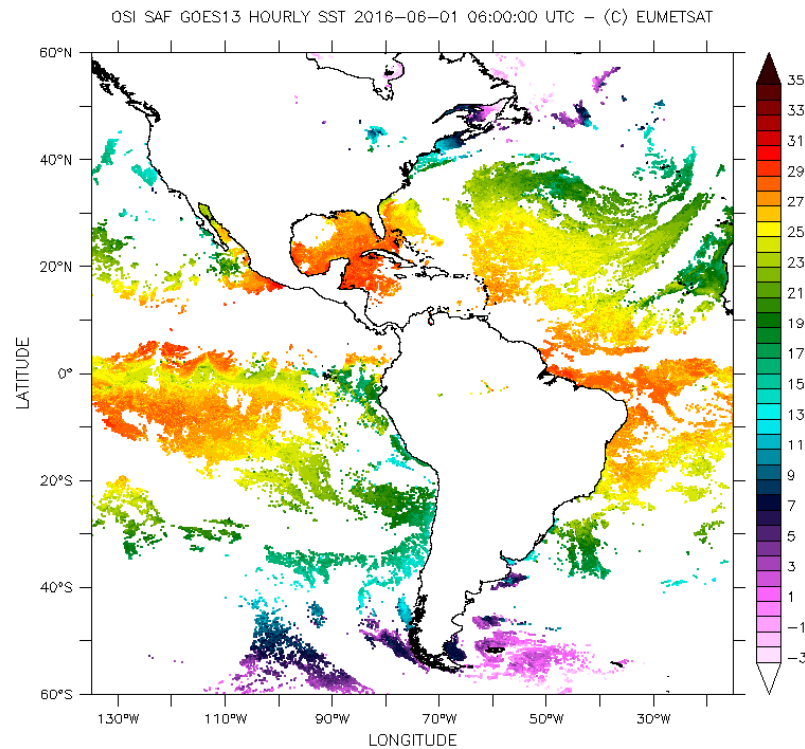
Outline

- Operational OSI SAF processing
 - Products
 - Methods
 - Validation
- MSG/SEVIRI reprocessing activity
- Future work

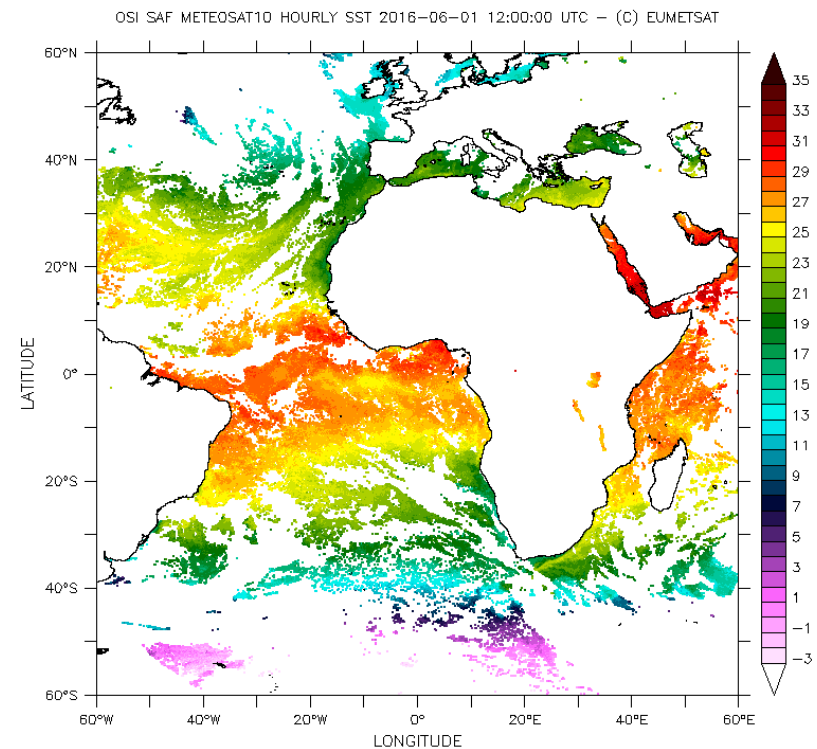
Operational OSI SAF MSG/SEVIRI processing

Products:

METEOSAT10	L3 (0.05° resolution)	60S-60N and 60W-60E	hourly
GOES13-East	L3 (0.05° resolution)	60S-60N and 135W-15E	hourly



sea surface temperature (Celsius)

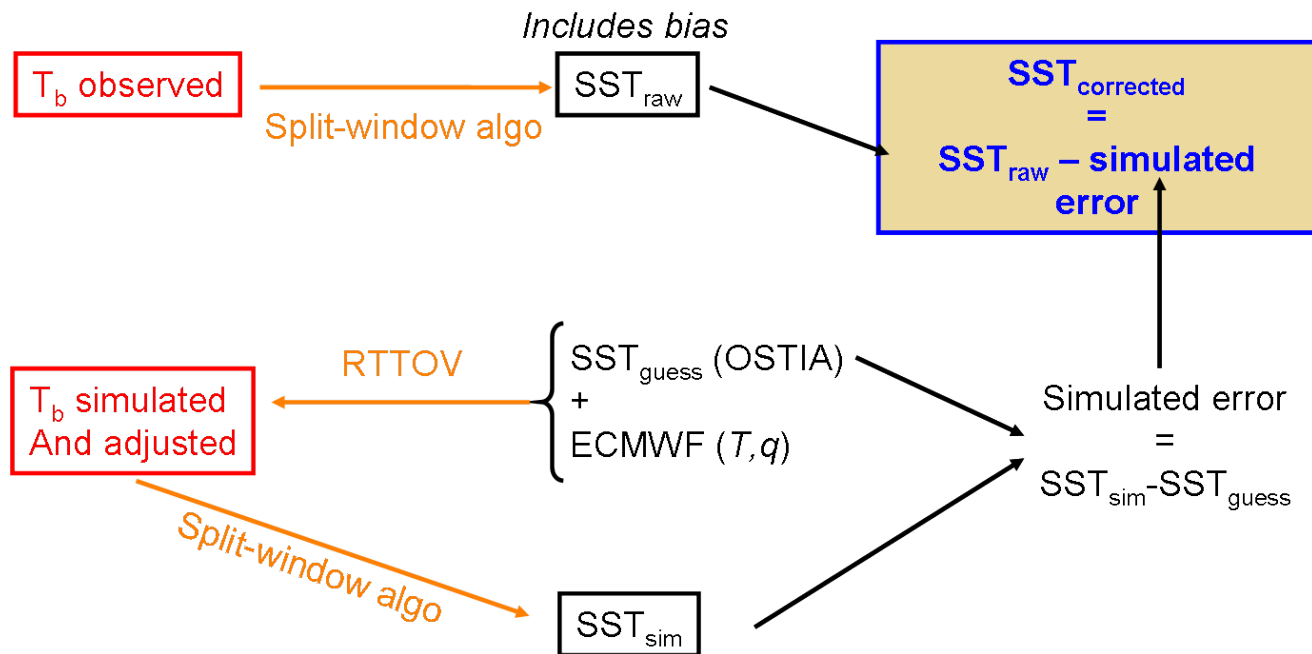


sea surface temperature (Celsius)

Operational OSI SAF MSG/SEVIRI processing

Methods:

- Classical NL algorithm:
 - $SST = (a + bS_{\Theta})T_{11} + (c + dS_{\Theta} + eT_g)(T_{11} - T_{12}) + f + gS_{\Theta}$
- Algorithm correction (Le Borgne et al. 2011): Remove regional and seasonal biases.
- Quality level and SSES

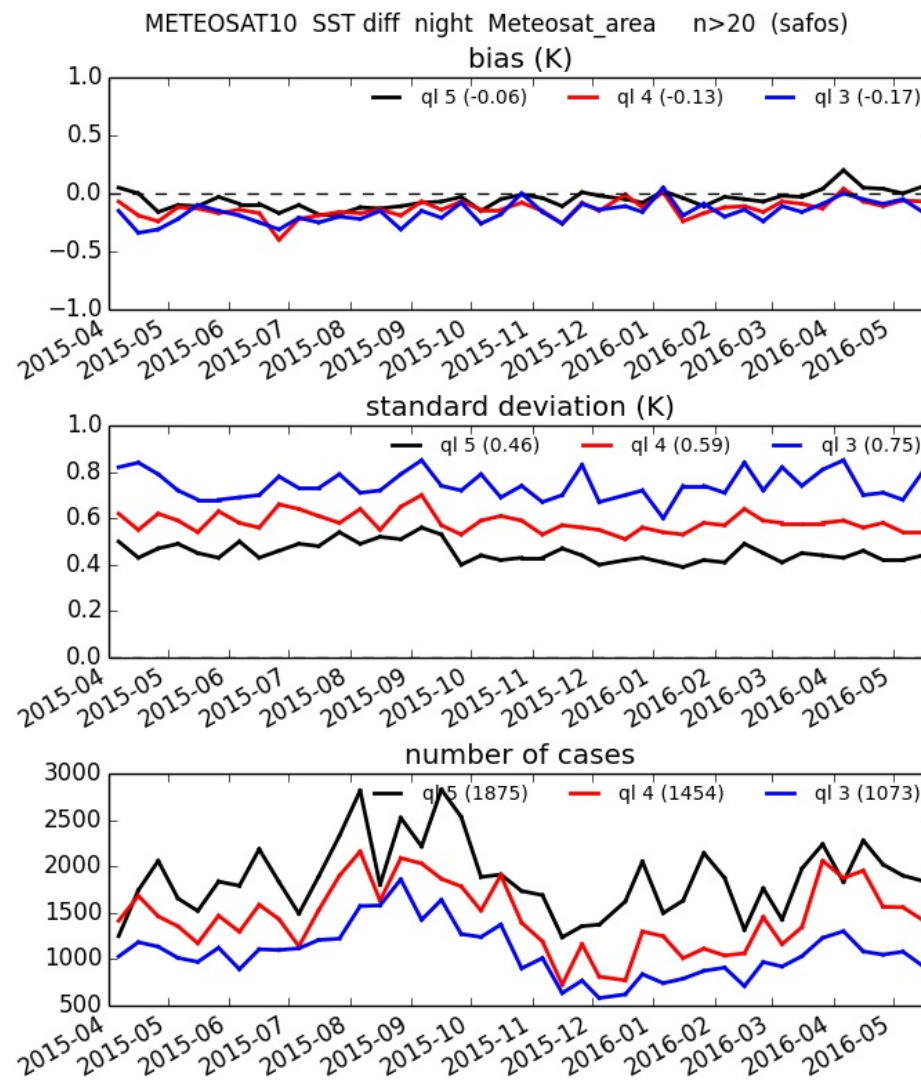


Operational OSI SAF MSG/SEVIRI processing

Validation:

Matchup dataset: Drifting buoys SST available through the GTS (with a 5-day delay)

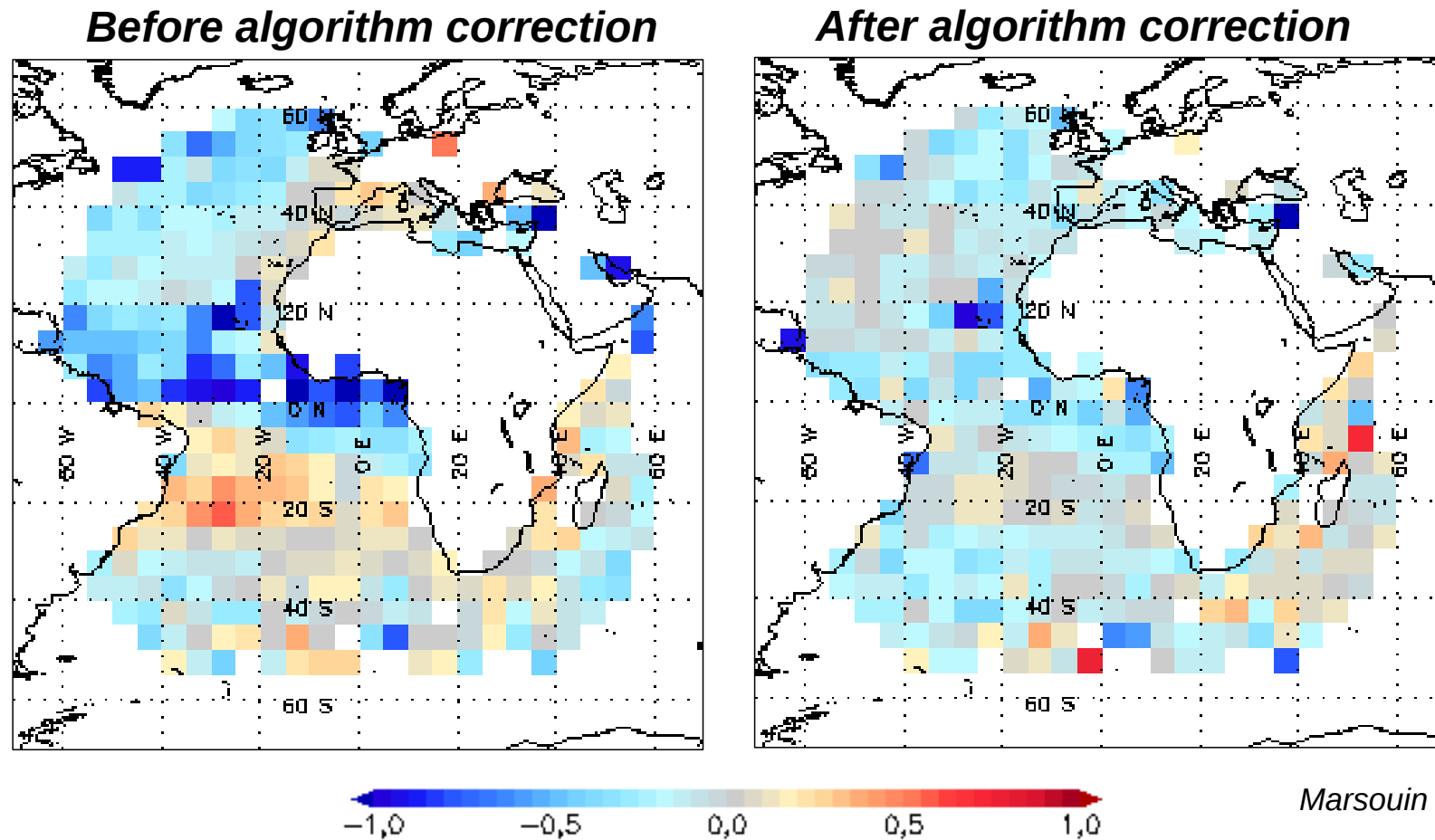
- ▶ $\Delta t < 3$ hours
- ▶ Buoy located in the centre of a 5x5 pixel box



Operational OSI SAF MSG/SEVIRI processing

Importance of the bias correction:

Night-time SST difference with respect to drifting buoys over 3 years (2011-2013) JFM



Marsouin et al., 2015

MSG/SEVIRI reprocessing activity

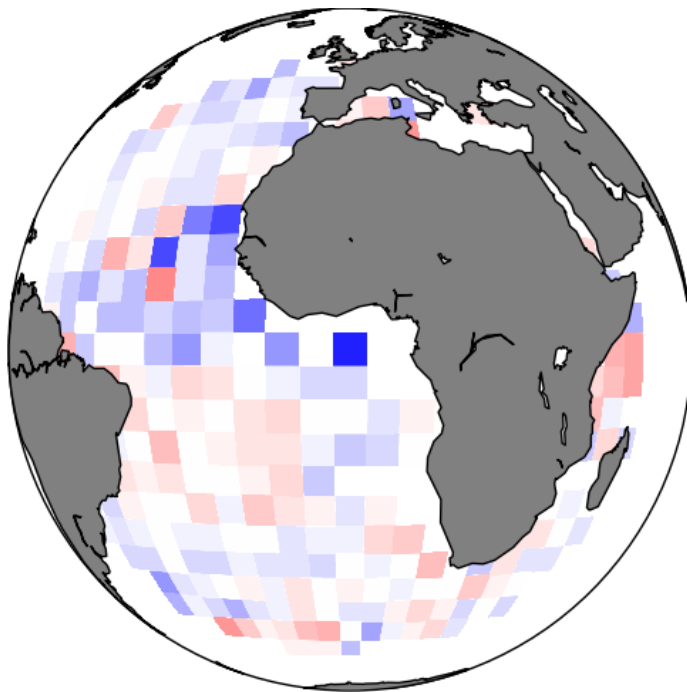
- Period of the reprocessing: 2004-2012
- Input data:
 - Level 1.5 MSG/SEVIRI data reprocessed by EUMETSAT
 - Simulation of brightness temperature for each pixel. RTTOV:
 - ECMWF ERA-interim temperature and water vapour profiles
 - OSTIA SST
 - Climate SAF reprocessed cloud mask
 - ERA CLIM in situ dataset for validation purpose
- Workfiles: simulations, SDI, NLSST, ...
- Final product (OSI-250):
hourly, -60 to +60°N and E, regular lat/lon grid 0.05°

MSG/SEVIRI reprocessing activity

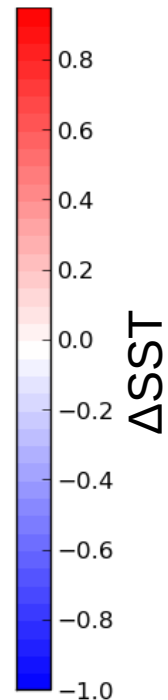
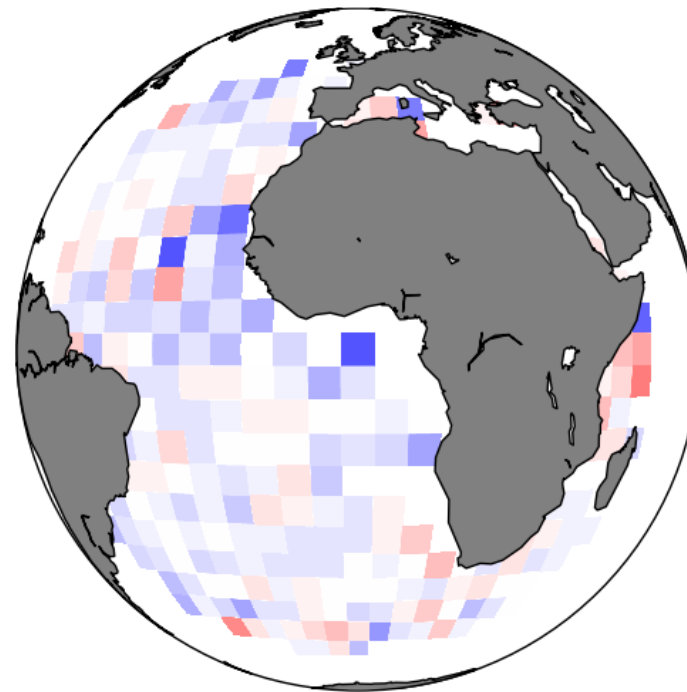
OE vs algorithm correction: Preliminary study

- Co-location dataset of operational Meteosat09 product
- One year of comparison (2012)

Algorithm correction (QL5)



Optimal estimation (QL5)

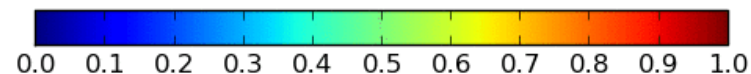
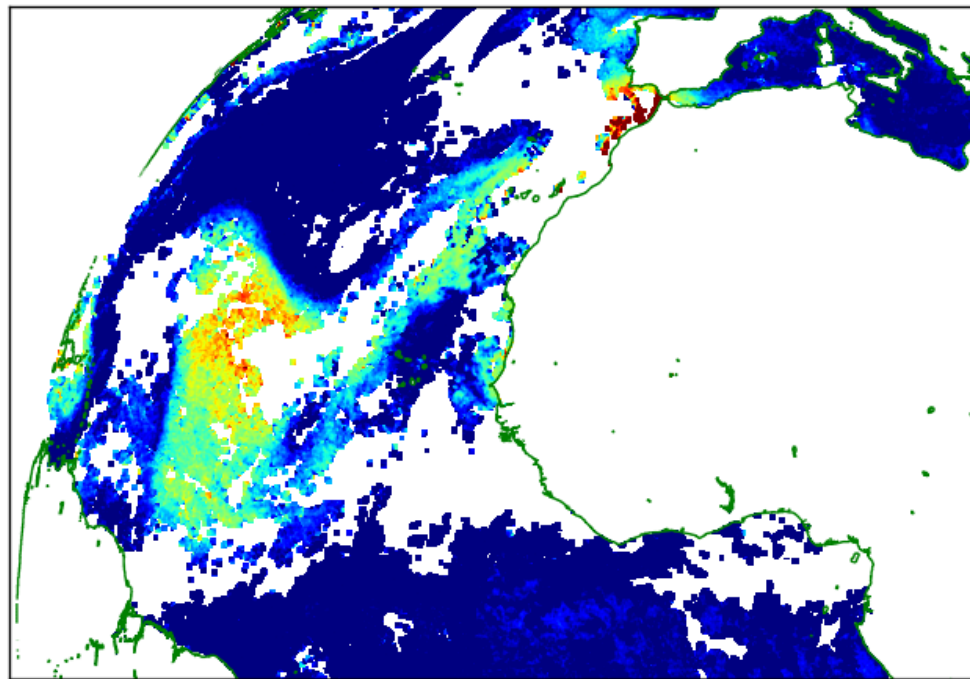


MSG/SEVIRI reprocessing activity

Reprocessed Saharan dust index:

- ▶ Night-time computation following (Merchant et al., 2006)
- ▶ Day-time interpolation
- ▶ Smoothing radiometric noise

SDI 17-19 July 2006



Future work

- MSG reprocessing:
 - Implement bias correction
 - Implement OE
 - Perform a detailed validation
 - Delivery scheduled early 2017 at the latest
- Operational chain
 - Implement lessons learnt from the reprocessing (eg. SDI, OE?)
 - New instruments: GOES-R(?), MTG, Metop-SG,...
 - Process Meteosat-8 data over Indian Ocean?

Thank you

