Geophysical Research Abstracts
Vol. 20, EGU2018-8059, 2018
EGU General Assembly 2018

The DUACS-DT2018 reprocessed sea level time series in CMEMS

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The DUACS system produces, as part as the Copernicus Marine Environment and Monitoring Service (CMEMS), high quality multimission altimetry Sea Level products for oceanographic applications, climate forecasting centers, geophysic and biology communities... These products consist in directly usable and easy to manipulate Level 3 (along-track cross-calibrated Sea Level Anomaly SLA) and Level 4 (multiple sensors merged as maps or time series) products and are available in global and regional version (Mediterranean Sea, Arctic, European Shelves ...).

A full reprocessing is carried out almost every 3 years based on the state-of-the-art Level 2 to Level 4 algorithms. In April 2018, a new version will be made available through the CMEMS. It will cover the entire 1993 – 2017 period and would benefit from major improvements associated with new altimeter and mapping standards.

Here, we report the results of this upcoming multi-mission reprocessing. We present the DUACS-DT2018 reprocessing and evaluate the changes associated with the new standards. Several comparisons with independent dataset (along-track, drifters, tide gauges) have been performed. We show that the new altimeter standards participate in up to 10% improvements of the SLA mapping mainly near coastal areas and at high latitude compared with the DUACS-DT2014 dataset. The new mapping standards contribute to 2% improvement mainly in the inter-tropical band and in high variability regions. Additionally, we found that the mesoscale scale structures are particularly improved in the regional Mediterranean Sea product.