

Addendum I to “Aquarius/SMAP sea surface salinity optimum interpolation analysis”

IPRC Technical Note No. 7

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Monthly mean, climatology and anomaly data

The purpose of this note is to describe the computations of the monthly mean, monthly climatological mean and monthly SSS anomaly fields.

Monthly mean SSS

For each calendar month, the monthly mean SSS field is the mean of weekly OISSS fields during the month.

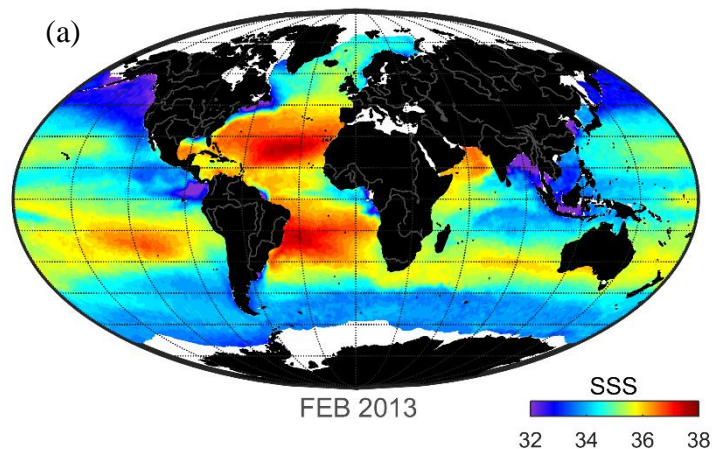
Monthly climatological mean SSS

Monthly climatological mean SSS fields are computed by averaging the corresponding monthly SSS fields over a 10-year period from September 2011 to August 2021.

Monthly SSS anomaly

Monthly SSS anomalies are determined by subtracting the corresponding monthly climatological means. This procedure removes the mean seasonal cycle and returns month-to-month inter-annual variations.

Figure 1 presents example maps of the mean SSS and SSS anomaly for February 2013.



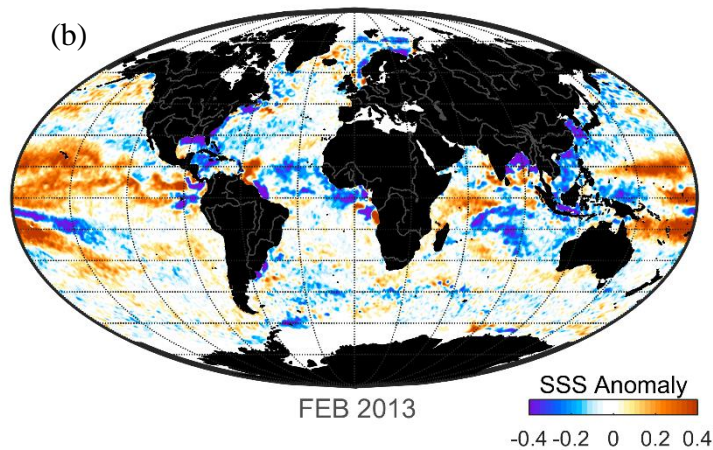


Figure 1. Aquarius/SMAP OISSS monthly (a) SSS and (b) SSS anomaly for February 2013.

Data format specification

For each month, the monthly mean, monthly climatological mean and monthly anomaly data are provided in the same file.

File name: OISSS_L4_multimission_global_monthly_v1.0_yyyy_mm.nc
 yyyy = 4-digit year, mm= 2-digit month of year

Grid and dimensions: monthly OISSS fields are provided on a regular 0.25°-longitude x 0.25°-latitude Earth grid. Xdim=1440; Ydim=720. Time (T) corresponds to the middle date of the month.

Variables:

‘sss’ (T, Xdim, Ydim) – monthly mean SSS;

‘sss_uncertainty’ (T, Xdim, Ydim) – estimated empirical uncertainty of the monthly mean SSS;

‘sss_climatology’ (T, Xdim, Ydim) – monthly climatological SSS based on the multi-mission OISSS dataset from September 2011 to August 2021.

‘sss_anomaly’ (T, Xdim, Ydim) – SSS anomaly relative to the product-based monthly climatology.

Access to the data

The Aquarius/SMAP OI SSS analysis can be accessed from the APDRC webpage <http://apdrc.soest.hawaii.edu/> either through the Live Access Server or OPeNDAP.

Digital data of the monthly OI SSS analysis (netCDF files) are also available at http://iprc.soest.hawaii.edu/users/oleg/oisss/GLB/Aquarius_SMAP_OISSS_monthly/