


# Six years of the new SMOS SSS maps in the Mediterranean Sea now available!

A new methodology using a combination of debiased non-Bayesian retrieval, DINEOF (Data Interpolating Empirical Orthogonal Functions) and multifractal fusion has been used to obtain 6 years of SMOS Sea Surface Salinity (SSS) fields over the North Atlantic Ocean and the Mediterranean Sea. This product has been developed by the Barcelona Expert Center and the GHER group at University of Liège (Belgium), under the ESA STSE project “SMOS sea surface salinity data in the Mediterranean Sea (SMOS+ Med)”. SMOS+ Med was leaded by Dr. Aida Alvera-Azcarate, from GHER.

The complete description of the methodology as well as the analysis of the quality assessment of the product can be found in Olmedo, E. et al., Improving SMOS Sea Surface Salinity in the Western Mediterranean Sea through Multivariate and Multifractal Analysis, Remote Sensing, 2018, 10(3).  The debiased non-Bayesian retrieval mitigates the systematic errors produced by the contamination of the land over the sea. In addition, this retrieval improves the coverage by means of multiyear statistical filtering criteria. This methodology allows having valid values of SMOS SSS in the Mediterranean Sea, something deemed impossible when the mission was designed. However, the resulting SSS suffers from a seasonal (and other time-dependent) bias. Those time-dependent biases have been characterized by means of specific Empirical Orthogonal Functions (EOFs) and removed from the SSS signal. Finally, high resolution Sea Surface Temperature (OSTIA SST) maps have been used for improving the spatial and temporal resolution of the SMOS SSS maps. The presented methodology practically reduces the error of the SMOS SSS in the

Mediterranean Sea by half. As a result, the SSS dynamics described by the new SMOS maps in the Algerian Basin and the Balearic Front agrees with the one described by in situ SSS, and the mesoscale structures described by SMOS in the Alboran Sea and in the Gulf of Lion are in good agreement with the ones described by the high resolution remotely-sensed SST images (AVHRR)

The products can be downloaded from our [THREDDS server](#). It is also possible browse [objective analysed](#) product and [fused](#) product using our WMS server. Remember that you can access to our data following a simple [registering](#) process.

Enjoy!

The BEC team.