



Use of DINEOF for operational reconstruction of missing data and outlier detection in satellite datasets.

Aida Alvera-Azcárate, Alexander Barth, and Jean-Marie Beckers

University of Liege, Astrophysics, Geophysics and Oceanography, Liege, Belgium (a.alvera@ulg.ac.be)

Satellite data are necessary for operational applications in oceanography, for example to track the position and intensity of a coastal upwelling, a front or an eddy. The presence of clouds often limits the usability of these datasets, making necessary to interpolate the data to remove these gaps. An accurate and fast technique is therefore needed to reconstruct the missing data. We present a near-real time reconstruction of Sea Surface Temperature (SST) data using DINEOF (Data Interpolating Empirical Orthogonal Functions) in the western Mediterranean Sea. DINEOF allows for a parameter-free reconstruction of the data with high accuracy, making this technique very suitable for operational applications. The example presented uses VIIRS (Visible Infrared Imaging Radiometer Suite) SST data and runs daily in less than one hour. The process includes downloading the data, detecting of outliers and reconstructing the missing data, all in an automated way. Tracking of eddies in the Alboran and Ligurian Seas will be shown as examples of the quality of the reconstructed dataset. An implementation using Sentinel-3 SST and colour data will be also presented.