



Reconstruction and analysis of QuikSCAT wind measurements with an EOF-based technique

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The SeaWinds sensor aboard the QuikSCAT satellite provided wind measurements over the world ocean until November 2009. Every day, about 90% of Earth's oceans was covered. Thanks to its spatial and temporal resolution, the QuikSCAT wind products are often used to provide numerical model atmospheric forcing.

However, due to the configuration of the satellite swaths, gaps are frequently observed in the daily wind maps. Our objective here is to apply an iterative reconstruction of the wind fields using an EOF-based method called DINEOF. The method works on a time series of images and aims to compute the wind values using a truncated EOF decomposition.

The method is applied on the wind intensity, direction and zonal/meridional components, and with different combinations of them, in order to determine the best choice, regarding the reconstructed field and the convergence of the method. In particular we will focus on the ocean region off northwestern African where wind drives several processes such as coastal upwelling, filaments and island eddies.

The principal modes are interpreted and compared with the results obtained with sea surface temperature in the same region.