



High-resolution modelling of the Cape Ghir filament and comparison with in situ data

Charles Troupin (1), Evan Mason (2), Javier Arístegui (2), Jean-Marie Beckers (1), and Pablo Sangrà (2)

(1) University of Liège, GHER, Liège, Belgium (ctroupin@student.ulg.ac.be), (2) University of Las Palmas de Gran Canaria, Las Palmas, Spain

The object of this work is the study of an upwelling filament developing off Cape Ghir (NW Africa), using high-resolution numerical modeling.

The model implemented is ROMS. The spatial resolution goes from 5km for the larger domain to about 800m for the smaller one. Doing so, sub-mesoscale structures have to be observed. The forcing is done mainly through climatological wind and heat flux, while the boundary conditions are extracted from parent domain using modern off-line nesting techniques.

A set of measurements collected from historical databases and from recent campaigns (CAIBEX, summer 2009) are analyzed in order to validate the model results. To this end, the software DIVA (Data Interpolating Variational Analysis) is used. A time series of satellite images covering the same region is analyzed to determine the main EOFs and to fill in incomplete images.

The model results show good qualitative agreements with the surface structures observed with the satellite imagery. The high spatial resolution obtained while surveying the region of Cape Ghir permits further comparisons of the filament characteristics.