



Decadal and inter-decadal variability of surface heat fluxes in the Mediterranean Sea and the Northeast sector of the Atlantic ocean

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This presentation shows some preliminary results of VANIMEDAT, a Spanish project aimed to study the decadal and interdecadal sea level variability of the Mediterranean Sea and the Northeast sector of the Atlantic Ocean. In the first stages of the project we have examined the spatial and temporal variability of heat fluxes (latent and sensible) over the region. The data set consists of 44 years (1958-2001) of model outputs with a spatial resolution of 0.5° . All data were derived in the framework of HIPOCAS, an EU project aimed to generate a downscaled re-analysis of meteorological and oceanographic fields. Magnitudes such as the temporal mean at each grid point, the time evolution of the spatial mean and the corresponding variances have been obtained for each season and for the whole year round. Results show that the maximum variance of latent heat fluxes is located at the Gulf of Lion and at the Aegean Sea, with values of about $8 \times 10^3 (\text{W}/\text{m}^2)^2$. Next, an Empirical Orthogonal Function (EOF) analysis has been performed in order to obtain the main modes of spatial variability and the associated temporal amplitudes. The next step will consist of using the fluxes to force a 3D baroclinic model, with the aim of obtaining a complete characterization of the steric component of sea-level variability. The effect of the mechanical atmospheric forcing on sea level has already been modelled in the region, so that from the comparison of these two components with total sea level (measured by tide gauges and altimetry) it is expected to build up a whole picture of the different components of sea level variability in the region.