



The VANIMEDAT project: decadal and interdecadal sea-level variability in the Mediterranean Sea and the Northeastern sector of the Atlantic Ocean.

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VANIMEDAT is a 3-year project funded by the Spanish Marine Science Program aimed to study the decadal and interdecadal sea-level variability in the seas surrounding the Iberian peninsula. The initial data base includes long tide gauge records, improved altimetric data sets and a 44 year (1958-2001) downscaled re-analysis of meteorological and oceanographic fields generated in the framework of the HIPOCAS project. The first objective of VANIMEDAT is to determine the spatial and temporal variability of sea level, paying special attention to the consistency between coastal and open sea observations. To do this, we take advantage of the complementariness of the data sets: while the altimetry reports the open sea variability with a convenient spatial resolution, tide gauge records mainly correspond to coastal sites and provide the time length requested to study the variability at decadal and interdecadal scales. The second objective is to quantify the contribution, at a regional level, of the different mechanisms that drive sea-level variability. This will be achieved basing mainly on the results of numerical modelling. Namely, we aim at quantifying the effect of atmospheric pressure and wind forcing (from the analysis of sea-level residuals produced by the model HAMSOM) and quantifying the contribution of the steric component (from the results produced by a 3D baroclinic model forced by HIPOCAS heat fluxes). The third objective is to estimate the ocean mass increase as the difference between total sea level and the two contributions previously determined. In this presentation we show the results of the first year of the project.