



## **Towards an operational coastal oceanography system in the Basque Country (southeastern Bay of Biscay)**

A. Rubio (1), J. Mader (1), L. Ferrer (1), A. Fontán (1), G. Esnaola (1), Y. Sagarminaga (1), A. Caballero (1), J.A. Aranda (2), A. Morais (2), and Ad. Uriarte (1)

(1) AZTI, Marine Research Division, Pasaia, Spain (arubio@azti.es), (2) Meteorology and Climatology Direction of the Basque Government

Recent efforts have allowed laying the foundations of an operational coastal oceanography system in the Basque Country region (southeastern Bay of Biscay). This strategy brings together climatological, oceanographic and meteorological institutions, in order to improve the way in which these services are working presently and merge the products to a unique operational system looking towards 2010.

At the present time, along the 170 km coastline of the Basque Country, the marine observation system keeps 6 coastal stations measuring oceanographic (temperatures, currents, tides and waves) and meteorological parameters, 2 deep sea buoys (located over the slope between 450 and 550 m depth) measuring oceanographic (temperature, salinity and currents from surface to 200m and waves) and meteorological parameters, a HF Radar array (200 km range, 6 km horizontal resolution) and a near-real time satellite data service (SST, SSH, ocean colour). The modelling system consists of two configurations of ROMS, covering a regional and a sub-regional domain (6 and 2 km horizontal resolution, respectively) and using real-time high resolution atmospheric forcing. Model outputs are being validated with real data. The future system will provide hindcast, nowcast, and forecast of oceanographic and meteorological conditions at several time-scales, together with systematic and long-term routine measurements of the sea and atmosphere. Preliminary results of the operational system show the suitability of numerical models to explore the physics of ocean and atmosphere in this region. Model-data comparisons show a reasonable agreement in terms of surface dynamics. The vertical profiles obtained from the deep sea buoys provide worthy information on the local water column dynamics and the variability of the intermediate layers. Such variability is related to slope dynamics, seasonal variations of ENACW properties and tidal forcing. The profiles provide some interesting guidelines for the incoming research on the validation and improvement of the modelling system.