



Comparison between real drifter's trajectories and simulated trajectories using HF radar data, in the Bay of Biscay

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A High Frequency (HF) radar network is operational since the beginning of 2009 for the oceanic region of the Basque Country, Spain (south-eastern part of the Bay of Biscay, Atlantic Ocean). It forms part of the Basque operational data acquisition system, established by the Directorate of Emergency Attention and Meteorology of the Basque Government. It is made up of two antennas emitting at 40 kHz broadband and 4.5 MHz frequency and covering a 150 km range with 5 km radial and 5° angular resolutions. Hourly space- and time-covering measurements are contributing considerably to the study of surface current patterns and the main physical processes in the area. Additional applications relate, for example, to security of navigation, maritime rescue, validation and improvement of numerical models and trajectories prediction.

Since 2009, different drifters have been deployed in the study area. Since the radar has been proved to reproduce the time evolution of the currents through comparison with moored buoys with a reasonable accuracy, the aim of this work is to evaluate the capabilities of the system to reproduce the trajectories of a set of drifters available in the study area. To make trajectory simulations, we will use HF radar total velocities, surface velocities obtained from EOF (Empirical Orthogonal Function) analysis of the whole radar data set, forecast velocities for 48 hours and also OMA (Open-Boundary Modal Analysis) derived current velocities.