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Modelling variability of circulation and ecosystem response along the N and NW Iberian Atlantic coast with a realistic configuration of the ROMS model

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The Spanish Institute of Oceanography (Instituto Español de Oceanografía, IEO) has been performing sustained observations of physical (temperature, salinity and currents) and biochemical variables (nutrients, oxygen and plankton) along the N and NW Atlantic Iberian coast since the late 80s. In this contribution, we show the advances in the application of a realistic high resolution configuration of the ROMS model coupled to a Fasham-type biogeochemical model (N2PZD2). We will show how different choices of model configuration (bathymetry smoothing, horizontal advection schemes, vertical turbulence closure, resolution, open boundary forcing···) affect model performance in comparison to observations. We will concentrate on the seasonal and interannual variability of freshwater plumes, upwelling and shelf and slope currents. Additionally, we will show how the use of a numerical model combined with sustained observations of physics and biogeochemistry from the coastal observatory allow us study variability of plankton productivity and also the effect of circulation on early life stages of fish at different temporal and spatial scales in the area, with special emphasis on the spring transition.

Do you need an official invitation letter?

No

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