

Development and assessment of the IBI operational ocean system

Levier B.¹, Cailleau S.¹, Chanut J.¹, Reffray G.¹
Ayoub N.², De Mey P.², Lyard F.², Maraldi C.²
Fanjul E. A.³, Sotillo M. G.³

¹*Mercator-Océan, Ramonville-St-Agne, France*

²*LEGOS, Toulouse, France*

³*Puertos del Estado, Madrid, Spain*

Performances of a new forecasting system over the IBI (Iberian-Biscay-Irish) area are presented. Essentially developed during MyOcean project, it will progressively replace existing IBI forecasting system (ESEOAT) based on Polcoms code and operated by Puertos del Estado. One particularity of the new system lies in its very horizontal resolution. It will indeed provide ocean analysis and forecasts at “sub-mesoscale” permitting resolution ($1/36^\circ$) over a large region spanning the whole North East Atlantic. This will ultimately give a very refined picture of the ocean over this area for both scientific, marine safety and environmental applications. Another particularity is the use of the NEMO code. Since it is originally a large scale, climate oriented model, the IBI team has undertaken a significant number of numerical implementations to make it suitable for coastal modelling.

The calibration of the model is assessed through comparisons of a 2 years hindcast with an extensive observational dataset (climatology, profiles, buoys, tide gauges, HF radar). Analysis of the modelled shelf stratification, diurnal cycle, internal tides and Iberian Poleward Current are presented, all of these processes being stringent tests for any coastal modelling system. Finally, comparison to both Mercator North Atlantic operational system and ESEOAT system is discussed.