



Description of baroclinic model errors due to wind perturbations in the Bay of Biscay- Evaluation of observation networks

M. Le Hénaff (1), P. De Mey (1), P-Y. Le Traon (2) and P. Marsaleix (3)

(1) LEGOS, Toulouse, France, (2) Ifremer, Plouzané, France, (3) LA, Toulouse, France

In this work we aim at estimating the abilities of remote or in situ observation networks to control the model errors due to perturbations in wind forcing, in a 3D model implemented on the Bay of Biscay during summer 2004. The focus is on the baroclinic dynamics, involving low-frequency and short spatial scales.

The model is first validated by comparison with in-situ and remote data. Attention is paid to the respect of the baroclinic spatial and time scales by the model, especially the first Rossby radius of deformation. Then the model errors are investigated through the statistics of an ensemble of simulations. These simulations have run with a perturbed wind stress forcing, generated by adding a combination of terms from the wind stress data EOF analysis over the period. Observation networks are finally defined, and their impact evaluated through the eigenvalues of the scaled representer matrix.