The Mercator Ocean global 1/12° operational system : Demonstration phase in the MERSEA context

R Bourdalle Badie (2), C Derval (2), **Y Drillet** (2), O Le Galloudec (1), CE Testut (3), B Tranchant (2)

(1) Mercator Océan, (2) CERFACS, (3) MGC

Mercator Ocean has developed for operational oceanography application in the context of the MERSEA project a new ocean forecasting system which consist in a global ocean and sea ice high resolution model (1/12°), based on the NEMO OGCM and coupled to a data assimilation scheme based on the SEEK filter. Both 2D and 3D data are assimilated (altimetry, sea surface temperature and insitu temperature and salinity profiles). This system completes and improves the Mercator Ocean capacity to produce in real time physical ocean analyses and forecasts, which was based on a global 1/4° system with an horizontal refinment to 1/12° over the North Atlantic and the Mediterranean Sea. The first step in the developpement of such system was to perform an interannual simulation forced by ECMWF atmospheric forcing without data assimilation. The realism of this simulation and especially the variability of the ocean surface layer is essential to construct the error statistic which will be used to assimilate data. The qualification and validation of the performance of this system will be presented with special focus on the interannual simulation and on the assimilation statistics.