



Recent trends in Iberian upwelling simulated by ROMS

P.M.A. Miranda (1), J.M.R. Alves (1), and N. Serra (2)

(1) University of Lisbon, IDL, Lisbon, Portugal (pmmiranda@fc.ul.pt), (2) Institut für Meereskunde, University of Hamburg, Germany

The decadal evolution of the coastal waters offshore Iberia are simulated by the ROMS model, in response to atmospheric fields given by ECMWF ERA-40 (1961-2001) and ERA-Interim (1989-2008) reanalyses. The simulated sea surface temperature (SST) fields are verified against satellite AVHRR SST in a common period, and both are analysed to characterize variability and trends of coastal upwelling in the region. Opposing trends in upwelling frequency are found in the Northwest region, where upwelling has been decreasing in recent decades, and in the Southwest, where there is evidence of increased upwelling. These results confirm previous observational studies and, more importantly, indicate that observed SST trends are not due to changes in radiative or atmospheric heat fluxes alone, but to changes in upwelling dynamics, suggesting that such process may be relevant in climate change scenarios. Results also indicate significant improvements in ERA-Interim atmospheric data, when compared to ERA-40.