Geophysical Research Abstracts, Vol. 9, 02933, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-02933

Dependence of fall- winter upwelling recurrence along the Galician western coast on atmospheric forcing

M. deCastro(1), M. Gómez-Gesteira(1), **I. Alvarez**(1), J. M. Cabanas(2) and R. Prego(3)

(1) University of Vigo, (2) Spanish Institute of Oceanography, (3) CSIC of Vigo

Upwelling events driving ENACW (Eastern North Atlantic Coastal Water) into the Galican western coast rias had been considered typical spring-summer processes. However, they can also be observed in fall or winter under northerly winds blowing at shelf. The probability of upwelling favorable winds (from 1999 to 2004) was lower during autumn-winter than during spring-summer, although they may occur at any time of the year. Probabilities of ˜45% were calculated for February and November, with the highest probability (65 %) corresponding to July. Six different upwelling events were analyzed in a western Galician ria (Ria of Pontevedra) during the wet season (NDJF) from 2000 to 2005. These events were characterized by means of the zonal Ekman transport (Qx) at four control points in front of the Western Rias and the thermohaline variables measured at a fixed station in the main mouth of the Ria of Pontevedra. The duration of the upwelling events ranges from 27 days (during February and March 2002) to 69 days (during November, December 2004 and January 2005). Studied upwelling events show similar features during both seasons (similar wind forcing and upwelled water). Finally, Qx was correlated with the most representative atmospheric patterns in the Northern Hemisphere (EA, NAO, EA/WR, POL and SCAND) from 1966 to 2005. The winter EA pattern has the most influence on Qx showing an annual evolution with a prevalence of the positive phase from 1976 on. This positive phase is directly correlated with a prevalence of positive values of Qx which are upwelling unfavorable in the western Galician rias.