Geophysical Research Abstracts, Vol. 7, 08625, 2005
SRef-ID: 1607-7962/gra/EGU05-A-08625

Seasonal and mesoscale variability in the Peru upwelling system from in situ and satellite data and model results during the years 2000 to 2004

I. Puillat (1), C. Grados (2), V. Echevin (1), B. Dewitte (3) and G. Eldin(3)

(1) Laboratoire d'Océanographie et de Climatologie Expérimentation et Approche numérique (LOCEAN-exLODyC), Institut de Recherche pour le Développement, Paris, France, (2) Instituto del MAr del PEru (IMARPE), Lima, Peru, (3) Laboratoire d'études en Géophysique et Océanographie Spatiales (LEGOS), (gridpuillat@yahoo.fr / Fax: +33 1 44 27 38 05 / Tel: +33 6 61 30 57 76)

Historical data from hydrological cruises performed off Peru (86˚W-74˚W, 4˚S-20˚S) by Instituto del Mar del Peru (IMARPE) during the years 2000-2004 are described and analysed. The seasonal hydrographic conditions are briefly described and contrasted with episodes displaying intense surface or subsurface salinity anomalies. In contrast to the summer low variability due the calm wind conditions, intense upwelling and strong mesoscale activity take place in winter and spring, as evidenced on satellite sea level, surface temperature and wind data. The observations suggest a strong cross-shore variability at mesoscale, especially after strong upwelling events. A regional eddy resolving ocean model (ROMS at 1/9˚) is forced by Quikscat satellite winds and OGCM boundary conditions to investigate the dynamical processes at stake. Model results show that some of the off-shore mesoscale salinity anomalies observed in spring could be explained by equatorward advection of subsurface fresh subantarctic waters at the passage of a Rossby wave.