Geophysical Research Abstracts,
Vol. 10, EGU2008-A-01634, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-01634
EGU General Assembly 2008

Comparisons between oceanographic models and seismic observations of the Mediterranean Water Undercurrent and Meddies

N. Serra (1,2), V. Sallarés (3), B. Biescas (3), I. Ambar (1), G. Buffet (4) and R. Carbonell (4)

(1) Instituto de Oceanografia, University of Lisbon, Portugal, (2) Institut für Meereskunde, University of Hamburg, Germany, (3) Unitat de Tecnologia Marina - CSIC, Barcelona, Spain, (4) Institute of Earth Sciences "Jaume Almera" - CSIC, Barcelona, Spain (nserra@fc.ul.pt / Fax: +351 21 750 00 09)

A new research tool in the field of Physical Oceanography is emerging with the use of the Multichannel Seismic (MCS) method, which allows the study of small-scale ocean physical processes poorly resolved horizontally by conventional oceanographic measurements. In this work, as part of the European funded GO Project (www.dur.ac.uk/eu.go), MCS data from IAM survey (Gulf of Cadiz, 1993) and 2D and 3D numerical oceanographic model simulations are jointly analysed to characterize the "acoustic footprints" of features associated to the Mediterranean Water (MW) flow in the Gulf of Cadiz. Two configurations are presented: (1) an idealized bi-dimensional model of a MW-like water mass intrusion in a stratified background forced at one boundary by idealized internal waves; and (2) a realistic three-dimensional configuration of the spreading of MW in the Gulf of Cadiz including tidal forcing. The first set-up aims at showing the kind of impedance contrasts that can be generated from thermohaline intrusions and their modification by internal waves. The second set-up shows particular features of the MW Undercurrent variability and of Meddy generation processes and sheds some light into the difficulties of interpreting MCS data.