Geophysical Research Abstracts,
Vol. 10, EGU2008-A-06544, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-06544
EGU General Assembly 2008

1 Modelling the carbon cycle in the Mediterranean sea

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Because of its short turnover time and its zones of deep water formation, the Mediterranean Sea may be regarded as the best site to understand the interactions between climate and marine system.

Many studies have observed physical as well as biological modifications during the last decade in the Mediterranean Sea (Béthoux et al., 2001). It appears hence necessary to evaluate the role of climatic anomalies in these modifications.

To this end, I am including an ocean carbon cycle model (Mouchet et François, 1995) in the GHER 3D circulation model of the Mediterranean Sea (Beckers et al., 2002). The abiotic coupled model is forced by atmospheric reconstruction (ECMWF) and initialised with MEDAR climatologies. The preliminary results allow us to obtain the seasonal distribution of partial pressure of CO_2 over the whole Mediterranean Sea. These results are presented and discussed.