



Carbon dioxide dynamics and air-sea CO₂ fluxes in several Southern European Seas

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Underway measurements of the surface partial pressure of CO₂ (pCO₂), surface oxygen saturation (%O₂), sea surface temperature (SST) and sea surface salinity (SSS) were obtained with a 1 min frequency during the March-April and September-October 2008 EU IP SESAME (Southern European Seas : Assessing and Modelling Ecosystem changes) cruises on board the BILIM in the Cilician basin, Levantine basin, Eastern Aegean, Straits & Marmara Sea and Black Sea. Cross analysis of pCO₂, %O₂, SST and SSS allows to identify the major drivers of pCO₂ dynamics in these areas (temperature change effect on the solubility coefficient, biological activity, river inputs, ...). The relative horizontal variability and seasonal change is analysed across the 5 ecosystems. Air-sea CO₂ fluxes were computed and atmospheric CO₂ source-sink status of the 5 regions is evaluated.