



## Seasonal air-sea CO<sub>2</sub> fluxes off Northwest Africa

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CO<sub>2</sub> fluxes variability is explored off West Africa, an area dominated by the presence of the Mauritanian upwelling. Surface data autonomously taken by instruments installed on ships of opportunities over three years, 2005-2008, are used in the domain from the Canaries to 10°N. The observed temperature decreased with latitude and had its minimum value in the upwelling, with 17-18°C. Salinity increases with latitude, and had its minimum of 33 in autumn south of 15°S, due to heavy rainfall during that season. The fugacity in seawater showed significant spatial and temporal variability dominated by the presence of the upwelling, reaching maximum values of 750 μatm in spring. CO<sub>2</sub> fluxes indicated that this area was a source of CO<sub>2</sub> throughout the year, acting as a sink just north of 24°N in winter and spring. Maximum fluxes took place in the upwelling area with values up to 3000 mmol m<sup>-2</sup> in spring. Between 20°-21°N, CO<sub>2</sub> fluxes decreased gradually over time, at an average rate of 650-700 mmol m<sup>-2</sup> y<sup>-1</sup>. SST and  $f\text{CO}_2^{sw}$  decreased while  $f\text{CO}_2^{atm}$  increased for the period 2005-2008.