



Variability of the partial pressure of CO₂ in the upper Scheldt estuary from 2003 to 2007

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The variability of the partial pressure of CO₂ (pCO₂) is investigated at several time scales (diurnal, seasonal and inter-annual) in the upper Scheldt estuary from a time-series from 2003 to 2007 at the Ste Anna fixed station located in Antwerp (51°14'N 4°23'E). The diurnal variations of pCO₂ are dominated by the tidal signal. The seasonal variations of pCO₂ are related to the combination of temperature change, emission of CO₂ to the atmosphere and biological activity. From 2003 to 2006, the annual average of pCO₂ is relatively stable. A very marked pCO₂ decrease was observed from 2006 to 2007 that we attribute to the start of the Bruxelles-Nord sewage treatment plant that started early 2007.