

# **Variations of the partial pressure of carbon dioxide in the upper Scheldt estuary from 1993 to 2006**

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A survey of the surface partial pressure of CO<sub>2</sub> (pCO<sub>2</sub>) was investigated from 1993 to 2006 in the heterotrophic macrotidal Scheldt estuary. Data were gathered from the projects BIOGEST and EUROTROPH, the automated system deployed on the R.V. Belgica and from the pCO<sub>2</sub> measurements performed at the fixed station located in the vicinity of Antwerp (Belgium) in the maximum turbidity zone of the estuary. The pCO<sub>2</sub> data were sorted according to salinity and studied from salinity 10 to the external limit of the estuary (3.6°E). Surface pCO<sub>2</sub> normalized at the mean annual temperature of 13°C (pCO<sub>2</sub>@13°C) showed a strong interannual variability. Maximum pCO<sub>2</sub>@13°C events were observed in 1994 and 1998 (up to 5000 μatm at salinity 10) and minimum events down to 400 μatm at salinity 17 in 2001 and 2004. Since 1993, the surface pCO<sub>2</sub>@13°C decreased from to 4500 to 2500 μatm at salinity 10, and from 1500 to 1000 μatm at salinity 17.