DIC DYNAMICS IN THE UPPER SCHELDT ESTUARY

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The Scheldt estuary is one of the most polluted macro-tidal European estuaries due to a high anthropogenic pressure around its catchment area. High load of suspended organic matter (with at least two third directly related to human activities) associated to a long residence time within the estuary (three months) contribute to an intense bacterial degradation. From November 2002 to January 2004, we continuously measured partial pressure of CO2 (pCO2) in the Maximum Turbidity Zone (MTZ) of the upper Scheldt estuary. pCO2 in the surface brackish water is outstandingly high, ranging from 2000 to 10000 ppm, which represents up to 2700% of the CO2 atmospheric pressure. CO2 also shows strong meso- and macroscale variabilities and on an annual scale it appears that pCO2 is mainly controlled by temperature and heterotrophy.