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Quantification of CO_2 Fluxes for different domains of the Eastern Atlantic Ocean

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In the frame of CARBOOCEAN Project the QUIMA-VOS line is monthly monitoring the carbon dioxide partial pressure along the eastern part of the Atlantic Ocean (from Felixstowe to Cape Town) crossing highly dynamic environments that has been divided in provinces and domains. In this work the VOS track along the Atlantic Ocean is divided in four provinces from July 2005 to December 2007, North Atlantic Subtropical Gyral Province (NASE), Canary Coastal Province (CNRY), Eastern Tropical Atlantic Province (ETRA) and Benguela Current Coastal Province (BENG) being the CNRY and BENG two of the most important eastern boundary systems of the world Ocean.

The CO_2 fugacity, the oxygen and chlorophyll a for each band and domain is displayed, showing the different hydrographical and biogeochemical properties from each domain from oligotrophic areas (NASE) to upwelling areas (CNRY, BENG) favouring high biological activity. CO_2fluxes, assuming the VOS track is representative for each domain, were computed using three different parameterisations. The variability observed for each domain and parameterisation is discussed.