

Activities of the Brazilian Ocean Acidification Research (BROA) group

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The Brazilian Ocean Acidification Research (BROA) group was established in December 2012 during the Workshop “Studying Ocean Acidification and its effects on marine ecosystems”, organized by the International Geosphere-Biosphere Programme (IGBP), São Paulo University (USP), Council for Research and Scientific Development of Brazil (CNPq), and National Institute for Space Research (INPE). Briefly, the group aims in a short term to integrate the Brazilian researchers in a wide interdisciplinary national network on Ocean Acidification (OA) studies and to contribute with the international programs in course. The group acts on distinct environments along the Brazilian coast from estuaries to open ocean regime. Here, we highlight some projects being executed or in the process to be implemented regarding OA issues. The SIMCOSTA project (<http://www.simcosta.furg.br/>) will deploy 4 surface buoys coupled with biogeochemical sensors (pH, pCO₂, nitrate, DO) along the Brazilian continental shelf, starting probably in November 2013. The EstARte project will be seasonally sampling surface pCO₂, pH, DIC, and TA along the Brazilian south and southwest continental shelf-break (2014-2015). The FLUXCARB project recently contributed to the understanding of biogeochemical processes involving carbon flux on the continental shelf of Bahia State (NE Brazil). Regionally, the marine carbonate system and air-sea CO₂ fluxes are under investigation in coastal marine ecosystems in Rio de Janeiro State. The net community metabolism, calcification-dissolution of carbonate, and fluxes of carbon dioxide have been estimated in coastal reefs of Bahia State, as part of the RECORBA project. Additionally, a biogeochemical modeling project is studying the main physical and biological factors influencing the continental shelf pump (CSP Project) of carbon in the Southwest Atlantic Ocean. Previously, observational studies (2008-2011) were performed mainly focusing on CO₂ fluxes along the Brazilian and Patagonian continental shelf, crossing the South Atlantic Ocean from Brazil to Africa, and in the Atlantic Sector of the Southern Ocean (Bransfield Strait and NW Weddell Sea).