Direct observations of the hydrographic and biological properties in the Tanzanian inner-shelf environment during the South West Monsoon of 2018: a contribution from the R/V Agulhas II toward the Second International Indian Ocean Expedition (IIOE-2)

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Abstract

An interplay of physical and biological processes in the oceans are known to drive the productivity of the marine ecosystems, thus providing food, sustaining fisheries and other economic and ecological services of great importance to the society. In the western Indian Ocean (WIO), along the Tanzanian coast, this is not an exception: the majority of the population rely entirely on artisanal fishing for subsistence. In fact, more recently regional and international efforts have been coordinated to study in greater details the productivity of the East African Coastal Current, driven/enhanced by the developments and evolution of coastal upwelling phenomena. Therefore, as part of the IIOE-2, in June of 2018, the South African research vessel "Agulhas II" surveyed the WIO region, with special focus on the inner continental shelf along the Tanzanian coast, and the Comoros Basin. Casts of Conductivity Temperature Depth (CTD) instrument, attached with biological sensors were deployed at 40 pre-defined oceanographic stations. In this study preliminary results from a sub-sect of 19 stations along the Tanzanian coast, between Tanga and Mtwara towns, known as "hot-spots" of strong upwelling events are presented. These datasets provide value contribution and can be used for evaluation of numerical models of the region.

Key words: Coastal upwelling, productivity, ecosystems, oceanography, continental-shelf.