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Poster
The oceanic and atmospheric circulations are fundamental mechanisms in the Earth's climate regulation. Oceans are essential for the thermic balance in the planet's system; more than 90% of the heat excess of the last 50 years is stored in the ocean. The Atlantic Meridional Overturning Circulation (AMOC), composed in the deep layers by North Atlantic Deep Water (NADW) and Antarctic Bottom Water (AABW), is one of the main climate regulators of the planet, interconnecting and redistributing heat, oxygen and nutrients in the Atlantic Ocean. In this context, the Western Atlantic Equatorial region plays a key role in the development of studies about inter-hemispheric exchanges. The PIRATA XVII expedition cruise occurred between October of 2017 and January of 2018, collected unprecedented ocean data which improves knowledge of this location, mainly in the deep waters studies. There were 18 oceanographic stations in a section over 38ºW, from 2ºS until 15ºN. The study demonstrates that those waters are guided by the local topographic features, mainly the AABW that is confined in the deepest regions of the Equatorial Channel. The analysis of non-conservative parameters, like pH and dissolved oxygen, indicated the presence of waters from different characteristics and regional circulations processes. Moreover, it was possible to investigate temporal variation comparing the results with oceanographic databases, the total period of 28 years, which point to a warming trend of the AABW at a rate at about 0.7ºCx10-2 per year. The scarcity of oceanographic data remains the biggest challenge, evidencing the demand for more studies in the area. Scientific marine researches developed in the Western Equatorial Atlantic are essential in a scenario of climatic changes, either to answer present questions and to inspire new ones
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