Sujet de stage de M1 SOAC – 2024-2025 :

Titre :

Objectifs et descriptions (quelques lignes)

The student will collaborate in the research line titled "*Marine Heatwaves and Cold Spells in the Western South Atlantic Ocean,*" currently under development at Physical Oceanography laboratory (LOF/COPPE) - Engineering Ocean Program - Federal University of Rio de Janeiro.

One of the consequences of climate change in the oceans is the increase in the frequency and intensity of sea surface temperature (SST) events, such as marine heatwaves (MHWs) and marine cold spells (MCSs). MHWs are defined following Hobday et al. (2016) as positive SST anomalies that persist for more than 5 days above the 90th percentile threshold, calculated from a long period of SST data. Similarly, MCSs are defined as SST anomalies that last for more than 5 days below the 10th percentile (Schlegel et al., 2017). These extreme events can cover large spatial areas, occurring over the ocean and/or the continental shelf. Several adverse impacts on marine ecosystems are associated with the occurrence of these events (Smale et al., 2019; Alvarez Perez & SantAna, 2022).

In the Western South Atlantic Ocean, the occurrence of MHWs and MCSs and their consequences on the marine environment and the global terrestrial system are not well understood. In the literature, these events are characterized based on their signal at the sea surface (Manta et al., 2017; Rodrigues et al., 2019; Liu et al., 2024; Artana et al., 2024; Goes et al., 2024), with little or no information about the impact of these events on the vertical temperature profile and, consequently, on the vertical water density structure.

The aim of this study is to conduct a spatio-temporal characterization of MHW and MCS events in the Western South Atlantic Ocean, focusing on the subsurface thermal structure and its impact on water masses.

Accueil

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