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The Tropical Atlantic is facing a massive proliferation of Sargassum since 2011, with severe environmental and socioeconomic impacts. As a contribution to this proliferation, an increase in nutrient inputs from the tropical rivers, in response to climate and land use changes or increasing urbanization, has been often suggested and widely reported in the scientific and public literature. Here we discuss whether changes in river nutrient inputs could contribute to Sargassum proliferation in the recent years or drive its seasonal cycle. Using long-term in situ and satellite measurements of discharge, dissolved and particulate nutrients of the three world largest rivers (Amazon, Orinoco, Congo), we do not find clear evidences that nutrient fluxes may have massively increased over the last 15 years. Moreover, focusing on year 2017, we estimate that along the year only 10% of the Sargassum biomass occurred in regions under river plume influence. While deforestation and pollution are a reality of great concern, our results corroborate recent findings that hydrological changes are not the first order drivers of Sargassum proliferation. Besides, satellite observations suggest that the major Atlantic river plumes suffered a decrease of phytoplankton biomass in the last two decades. Reconciling these observations requires a better understanding of the nutrient sources that sustain Sargassum and phytoplankton growth in the region.
Presentation file
jouanno-presentation.pdf
Meeting name
PIRATA-24/TAV Meeting
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