



## Terceira Sessão: Conservação e áreas afins – Pôsteres

### **Decadal Changes and Phenological Response to Extreme Ocean Temperatures in the Southeast Brazilian Continental Margin.**

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Phenology studies of phytoplankton allow us to characterize periodical cycles of their abundance, which can trigger significant impacts with cascading effects on the entire marine system. We estimate the phenological indices of the Southeast Brazilian Continental Margin (SBCM) from 1999 to 2023, emphasizing patterns and trends of phytoplankton abundance over the last two decades and their potential association with extreme events of sea surface temperature (EE-SST). The time of initiation, duration, and maximum intensity of high chlorophyll concentrations period (HCCP) of each decade was calculated by the cumulative sum of remote sensing chlorophyll anomaly. The daily data were extracted from images of merged ocean color sensors within the Copernicus/ESA. The EE-SST of each decade was calculated by the difference between daily data and the 90th percentile of the climatology, considering the minimum duration of 7 days for each event. The daily SST was extracted from the NCEP. The results reveal a high negative trend of chlorophyll in the second decade from Cabo Frio up to off São Sebastião. There was a decrease in EE-SST between the two decades in this region compared to the overall SBCM. A significant change in the duration of HCCP northeast of Ilhabela was observed, which decreased by two months in the latter decade. The southernmost Continental Shelf (CS), under the influence of the Plata River plume, demonstrated a positive trend in chlorophyll concentration during the second decade. This area experienced the highest number of EE-SST. There was a significant increase in the duration of HCCP by 1,5 months, doubling the maximum intensity. The SBCM is recurrently being impacted by extreme events associated with climate change that, as observed in this study, affect the abundance of phytoplankton, mainly in the CS, where upwelling and nutrient-rich waters significantly influence the seasonal cycles of these primary producers.

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