

## Understanding the role of the Indian Ocean in climate variability: an ocean reanalyses perspective

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Ocean reanalyses indicate that the Indian Ocean is undergoing profound changes in its thermal structure and circulation. The pronounced warming trend of the Indian Ocean SST has been attributed to global warming. But in recent years there have also been notable inter-annual variations, such as recent unprecedented anomalies in the Indonesian Through Flow (ITF) during 2014-2016, and the extreme Indian Ocean Dipole (IOD) events in 2019 and 2020. These inter-annual variations have been proved to impact the global atmospheric circulation and ENSO, as results from seasonal forecasts experiments indicate. The question arises of whether these recent events are influenced by climate change, or are related with internal climate variability. Here we investigate whether the long term records from century-long ocean and coupled reanalyses shed any light into this question, and we discuss how these long-term records could be further improved.