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## The subseasonal to seasonal predictability of marine heatwave in Indian Ocean

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In recent decades, worldwide marine heat wave events have become stronger and more frequent. Especially in the Indian Ocean, where occurs the most significant sea surface temperature warming trend. We use observation and reanalysis data to extract the Indian Ocean marine heatwave events since 1981. And then analyzing the temporal and spatial characteristics of marine heatwave events through feature indicators. According to the different period of the development of the marine heatwave, the sources of predictability from the atmospheric and ocean circulation anomaly are revealed. Then five representative heat wave events will be selected, and multi-member ensemble hindcast with different lead times will be conducted for each event with CESM2 model. Based on the hindcast results, we evaluate the prediction skills for the Indian Ocean marine heatwaves. The capability of models to simulate the sub-seasonal to seasonal signals that affect the heat wave event will be examined eventually.