

***Marine calcifiers as timekeepers:
Environmental variability and ocean
surface conditions***

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Marine calcifiers are the most important components of the marine ecosystem that grow in the Tropical Oceans. They are widely known as the best archives to provide high-resolution records of ocean atmospheric variabilities on sub seasonal resolution spanning up to a few hundred years. Signatures preserved in these organisms are known to provide useful information and reconstruction of Sea Surface Temperature (SST), Sea Surface Salinity (SSS), upwelling intensity, oceanic circulation. Lakshadweep Islands in the north Indian Ocean harbour various types of such calcifiers and various workers have recently studied them for paleoclimatic/paleo-environmental reconstruction. However, the atmospheric CO₂ rise during the post-industrial era has resulted in a decrease of ~0.1 unit in surface ocean pH, a process commonly known as Ocean Acidification (OA) which has highly threatened the growth and existence of these marine calcifiers. In this talk, I will shed light on the significance and resilience of Corals and Giant Clam shells (two important marine calcifiers) growing under large variability in physical and biological processes in a strongly upwelling region of the Tropical Indian Ocean. Our preliminary records reveal that even short high temperature events could significantly perturb the biology of marine calcifiers and require long recovery phases. These results are particularly significant for conservation efforts of some of the most endangered marine calcifiers growing in regions in with on-going global warming trends.