

# Central Indian ocean mode and Indian summer monsoon

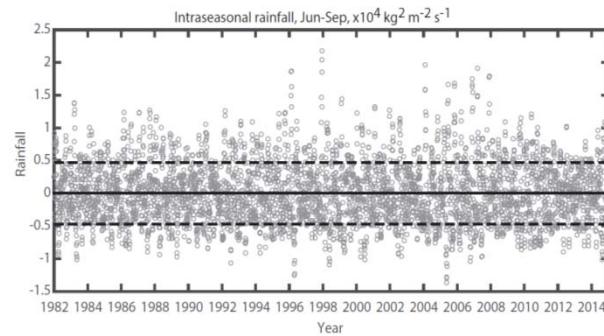
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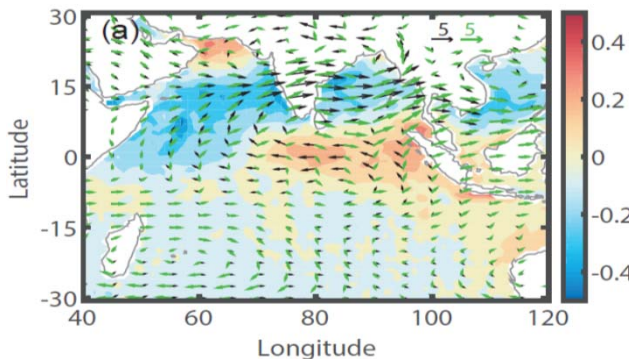
## Main Findings

- An intrinsic mode exists in the Indian Ocean – the Central Indian Ocean (CIO) mode;
- CIO mode plays a critical role in driving the heavy precipitation during ISM;
- CIO mode controls the propagation direction of the ISVs originating from the western Indian Ocean;
- CIO mode is expected to improve the MISO prediction.

## Differences in both dynamic and thermodynamic fields show the pattern of the CIO mode

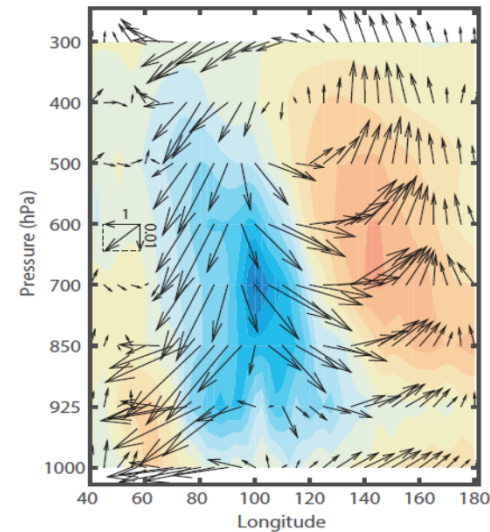


Large-rainfall Group:  
> Mean + STD  
Small-rainfall Group:  
< Mean - STD



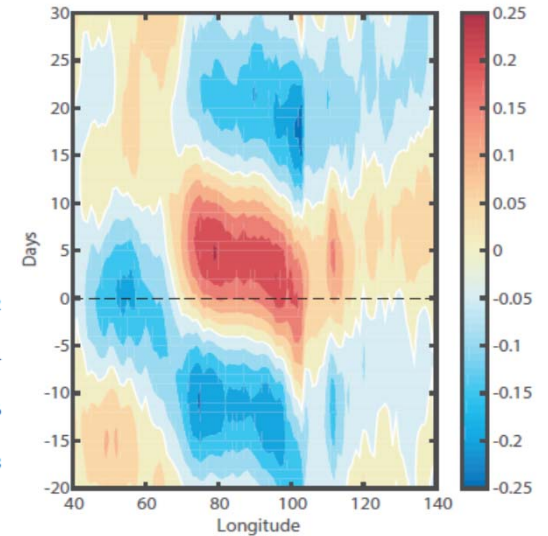
## Vertical structure of CIO mode

Relative humidity and wind

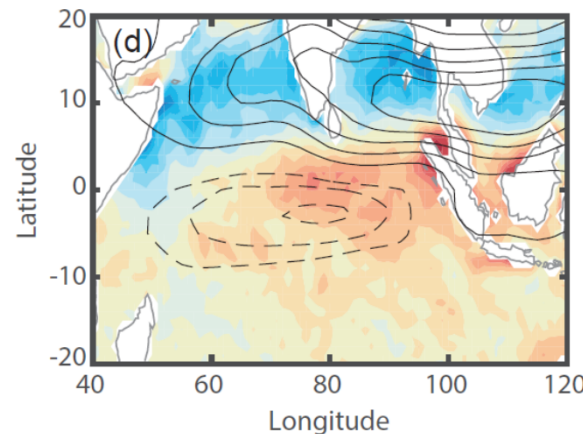


## Oceanic responses

SST along the equator



## CIO mode is captured by the combined EOF analysis



Colors: SST mode  
Contours: zonal wind mode

## CIO mode and MISO

