National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Evaluating the decadal variability of Tropical Biennial Oscillations in a warming climate
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Venue	: ER-303 Dept. Class Room
Date and Time	: 05 Jan 2024 (4:45 PM)
Abstract	: Indian Summer monsoon and Australian monsoon are tightly linked and varies on biennial time scale this phenomena is known as Tropical Biennial Oscillations (TBO). The tropical air-sea interaction variations play a critical role in varying the TBO and its decadal variability. Understanding the role of air – sea interactions and physical process in modulating the TBO will be helpful to improve the forecast. In this study we aim to evaluate the Coupled Model Inter comparison Project Phase 6 (CMIP6) models skill in predicting the TBO variability. For this study we have taken total twenty CMIP6 models. We have evaluated the CMIP6 models skill in simulating the TBO and its variability in historical period, we have also verified the impact of the Pacific Ocean in modulating the TBO. Out of twenty models only nine models are able to simulate the relation between Indian summer monsoon and Australian summer monsoon reasonably, others are failed to simulate the decadal variability TBO. In the observations we have identified decadal variability in the relationship between ISMR and ENSO, similar variability in ASMR and ENSO. However, most models were unsuccessful in capturing these-variability. So, total nine models who are simulating well, have been selected further for the prediction for future scenario evaluation. The model inability to obtain the decadal variation of ISMR and ASMR may be attributed to the failed to simulate the observed variability ISMR – ENSO as well as ASMR – ENSO relationship. The SST biases in the Indo – Pacific region in the model may be attributed to the poor skill of the models.