
Departmental Seminar

Seminar Title	: Assessment of hydrographic features in OMIP2 models in the Tropical Indian Ocean
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Venue	: ER 303 Class Room
Date and Time	: 12 Feb 2025 (04:00 PM)
Abstract	: The present study aims to analyze the available Ocean Model Intercomparison Project Phase-2 (OMIP2) models from the Coupled Model Intercomparison Project Phase-6 (CMIP6) group in representing the seasonal mean variations of temperature and salinity. The skill of the models in representing seasonal mean biases of temperature and salinity is assessed with World Ocean Atlas and Argo observations over the Tropical Indian Ocean (TIO), Bay of Bengal (BoB), Arabian Sea (AS), and Southern Indian Ocean. It is identified that most of the individual models and multi-model mean of OMIP2 models exhibit a cold (surface) and warm (subsurface) temperature bias over the entire TIO. The salinity analysis reveals that most of the TIO (except the equatorial TIO) is dominated by saltier biases, especially predominant over the south AS and the western BoB. Vertical shear of horizontal currents (VSHC) and the Brunt-Väisälä frequency have been analyzed to understand the stability of the Ocean, suggesting that the VSHC contributes to the vertical mixing resulting in weak stratification, is mainly responsible for the persistence of surface cold and subsurface warm biases. In addition, Freshwater transport (FWT) is estimated at different straits, suggesting that FWT can modulate the salinity in the fresh region of TIO. The current study summarizes the improvement and necessity of ocean models to depict vertical hydrodynamic conditions for skillful seasonal forecasts accurately.