
Seminar Title	: Impact of Shifting Patterns of the South Asian High on Interannual Variability of Indian Summer Monsoon Rainfall in Homogeneous Regions
Speaker	: Mr. G. Sripathi
Supervisor	: 8125817908
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Abstract	: The movement and intensity indices of South Asian High (SAH), an upper-level anticyclonic circulation over the Tibetan Plateau, play a crucial role in Indian summer monsoon rainfall (ISMR) during June-September (JJAS). The present study aims to document (i) the association between SAH and ISMR in June-July-August (JJA) and July-August-September (JAS) seasons, and (ii) the ISMR changes at different spatial and temporal scales. The Bayesian-change-point detection method identifies 1981 as change point and the dataset has been splitted into two groups (pastclimate:1901-1980 and current-climate:1981-2020) to analyse temporal variations in ISMR. Results indicate that the northwest-southeast (INW-SE), north-south (INS) and intensity (IINT) of SAH are strongly correlated (~ -0.67 , ~ -0.60 , and ~ -0.51 , respectively) with ISMR whereas the eastwest (IEW) index is negatively correlated (~ -0.52) during JAS season. This relation is stronger in the past-climate (1940-1980) than the current-climate (1981-2020), except for the IINT index during the JAS season. INW-SE and INS indices are closely associated with all-India, northwest india (NWI) and central india (CI) rainfall, whereas IINT is associated with south peninsular India (SPI) during JAS season. The INS leads to extreme (deficit) rainfall in NWI (SPI) regions. The northeast India (NEI) rainfall did not show any association with SAH indices; however, the IEW is strongly associated with NEI rainfall during El Niño years. The NWI and SPI rainfall have been significantly increasing in the current-climate due to the enhanced association of the INS and IINT indices, respectively, during the JAS season. There is a significant positive (negative) relation between meridional (zonal) wind shear and SAH indices except the IEW index. Strong and well-established SAH movement may favour the monsoon's northward and westward progression. The study demonstrates the role of SAH in the dynamical shifts of seasonal rainfall patterns across Indian homogeneous regions.