Improve Understanding of Indian Summer Monsoon using CMIP5 output

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General characteristic features of Indian Summer Monsoon (ISM) will be studied using CMIP5 models and observations. Driving factors like ENSO will be analysed to investigate ISM and ENSO teleconnection. The role of Pacific and Indian ocean will be addressed to understand their individual role and relative contribution in driving monsoon circulation. Whether Tibetan Plateau contribute in modulating monsoon circulation via Hadley or Walker circulation etc. will also be addressed.

Following Clausius Clapeyron relation, global precipitation increases due to increase in water vapour offset by weakening circulation in climate change scenario. Whether such global feature reflects regional changes of ISM will be addressed using CMIP5 outputs. Historical simulations will be compared with future scenarios. A mechanism for monsoon dynamics will be proposed by analysing vertical velocity, specific humidity etc.

Finally, studies using HADCM3/ RM3 with perturbed physics will be presented with an emphasis on circulation fields. Overall, this study under 'SAPRISE' (South Asian Precipitation: A Seamless Assessment) project will improve understanding on monsoon dynamics and will be useful for future prediction of ISM.