# Suitability of Pre-Monsoon Information in Clustering the Seasonal Mean Monsoon Variability

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The operational prediction of interannual variability (IAV) of Indian summer monsoon rainfall (ISMR) is currently being made using Regression based models using large scale dynamical indices as predictors[1] of the seasonal mean (June to September) rainfall. Even though the prediction skill of seasonal mean rainfall using statistical models is modest[1, 2], it is not well established if these indices can depict the spatially persisting patterns and intensity of seasonal mean variability found in drought, flood and normal monsoon years. In this study an attempt has been made to understand the suitability of these indices (or predictors) [1] chosen during pre-monsoon and preceding winter season in incarcerating the variability in spatial pattern and intensity of rainfall during monsoon season (June to September). A method based on Self Organizing Map analysis[3] is used to cluster (classify) the IAV of ISMR in 2X2 (=4) distinct patterns. This clustering algorithm captures the commonality of the indices routinely used as predictors by India Meteorological Department operational model[1] taken from the pre-monsoon and preceding winter season. A proper clustering should be reflected in the actual identification of the spatial patterns of rainfall during drought, flood and normal monsoon years. This study gives a qualitative estimate of the role of pre-monsoon climatic information (or pre-condition) in determining rainfall variability of the monsoon season. The advantages and disadvantages of the chosen indices are also being brought out in this study.

## References

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