A STUDY OF SPATIAL PATTERNS FOR THE CHANCES OF RAIN USING MARKOV CHAIN MODEL II

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Second order data was derived by counting the number of rain days satisfying given states (Dry or Wet) during the previous two days for thirty years at each site. Five day groups were found an adequate cluster size for deriving the second order data. For each site a 73x8 matrix was obtained. Data for seven dry zone sites were merged into a 511x8 matrix for intra-zonal analysis. Data for eleven sites from all zones were merged into a 803x8 matrix for inter-zonal analysis.

For each form of analysis, chances of rain for each day group were computed. Regression models were fitted using a Fourier Series and locational variables (Latitudes, Longtitudes and Altitudes). Separate models were fitted for each of the four states on the previous two days.

Under both forms of analysis, the effect of each locational variable was found to depend on the state during the two previous days. Chances of rain were found to differ within the dry-zone as well as between zones.

References:

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