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MARKOV CHAIN MODELING OF DAILY RAINFALL OCCURRENCE IN THE MAHANADI DELTA OF INDIA

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ABSTRACT

A two-state Markov chain probability model has been used to investigate the pattern of occurrence of daily precipitation during the rainy season over the Mahanadi delta of Odisha state of India. The study is based on the daily rainfall data for a period of 28 years for four meteorological stations in the region. Under the assumption of the dependence of daily precipitation on that of the previous day, attention has been focused on the analysis of certain aspects of the random structure of the precipitation phenomenon in conformity with the Markov chain properties.

KEYWORDS: Chi-square Test, Dry and Wet Spells, Goodness of Fit, Markov Chain Model, Steady State Probability, Transition Probability, Weather Cycle