

Preliminary results of Markov model approach in forecasting wet/dry condition over short periods

The Markov method was utilized in developing a model for forecasting wet/dry condition over short periods. Daily rainfall data from 8 meteorology stations, namely Colombo, Ratnapura, Kandy, Galle, Hambanthota, Batticaloa, Anuradhapura and Trincomalee were used in this study. The preliminary results show that the first order Markov model, applied by considering two state (wet, dry) transitions from a given day to the next day, was successful to the level of 73% in predicting the wet or dry status for a given day to the next day. The second order Markov model, which was developed by considering transitions from a given day couple to the day before leading to the next day, wet/wet-wet, wet/dry-wet, dry/wet-wet and dry/dry - wet showed slightly worse result (69%) than the first order model. This indicates the level of persistence in the daily precipitation. This observation was supported by the mean recurrence time of 1 day (for rainy days) calculated from the same data set. Both models can be used in short-term forecasts ranging from 1-7 days for wet/dry conditions.