Estimating daily maximum and minimum temperature observations in the northern and eastern parts of Sri Lanka

A. Thevakaran[1] and D.U.J. Sonnadara[2]

[1]Department of Physics, University of Jaffna, Sri Lanka
[2]Department of Physics, University of Colombo, Sri Lanka

A method based on the between-stations technique in estimating missing daily temperature observations was applied to estimate daily maximum and minimum temperature in the northern and eastern parts of the country which experienced disruptions in maintaining continuous weather records due to the hostilities in the region. The method assumed that for a given day, stations having similar geographical conditions will have temperatures that will deviate from their standard normal by similar amounts. Standard departures of serially complete 15 year daily maximum and minimum temperature records at several stations were used to estimate the temperature at a target station. The accuracy of estimating the daily maximum and minimum temperature was ±0.7°C and ±1.1°C, respectively. The accuracy of the estimation is higher for the maximum temperature compared to the minimum temperature. Approximately, 95% of the estimated maximum and minimum temperature values are within ±1 0C and ±2 0C, respectively from the observed values. The results indicate that simple statistical methods can be applied successfully to a cluster of weather stations to estimate the missing data or to validate recorded temperature observations in the northern and eastern parts of Sri Lanka.

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