

Microclimate Characteristics and Trends: An Investigation on Land Slides and Floods in Kerala

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Abstract:

The paper discuss long-term trends in temperature, rainfall, and wind speed from 2018 to 2024 using Automatic Weather Station (AWS) data from Nilambur region. A special study is made on the climate changes during floods and land slides recently happened in kerala state especially Kavalappara and Chooralmala, which are in an air distance of 30–35 km from Nilambur. The study basically relied on the parameters temperature, rainfall and wind speed. To analyze the data we used different approaches. First one was Trend Analysis to identify increasing and decreasing trends in each parameter. Second way of analysis approach was Seasonal Variation Analysis in which detected fluctuations in different seasons. Another one is Correlation Studies in which checked inter-dependencies between temperature, rainfall, and wind speed. The last one is Extreme Event Identification through which intensely studied outliers or anomalies indicating unusual climatic activity. Key roles of climate variables such as temperature, rainfall and wind speed are analyzed and developed a suitable equation to forecast the land slides and floods in kerala.

Keywords:

Microclimate, Automatic Weather Station, land slides, Floods.