

The Summer Undergraduate Research Fellowship (SURF) Symposium
2 August 2018
Purdue University, West Lafayette, Indiana, USA

Spatial and temporal storm generation from a stochastic view

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ABSTRACT

Precipitation is one of the most important parameters in study of hydrology and most of the research has been done on daily storm generation. Current weather generation models are used to replicate daily or monthly time resolution, which is not able to show the variability within one day or one month. This project deals with sub-daily storm generation with finer resolution and more accurate estimation, which also requires an independent storm separation method. And the Monte Carlo correlated multivariate simulation is applied to compute the variables. The description is essential for soil erosion and water quality research. Another reason is that the area which has valid data from gaged sites is limited compared to our interested area. By applying kriging method, our interpolation generates an estimated surface and credible estimation for those stations which have no sufficient data and the result will be used for further study. So far we have reliable estimates based on observed data and spatial interpolation shows a promising tool to estimate storms in ungauged locations.

KEYWORDS

Storm Generation, Stochastic Process, Monte Carlo Simulation, Statistical distribution