

# Neighborhood precipitation patterns suggest chaos through the logistic equation

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## **Abstract.**

The temporal time series, and frequency power spectra of local neighboring precipitation readings is described by the Logistic equation which is commonly used in the ecological study of the birth and death process of species. Robert May should the logistic equation has wider applicability to natural systems in general. The amount of precipitation from the potential cloud of ice particles is thought of as the total population of precipitable water from which certain geographic areas receive precipitation (“birth”) and other areas do not (“death”) due to the operation of relevant physical laws. Past attempts at the chaotic nature of precipitation focused on understanding attractor dimensions at a particular point in space. This presentation will focus on understanding the distribution of precipitation in both space and time through a neighborhood ratioing method. The description of the precipitation spectra in terms of the logistic equation more clearly shows the underlying chaotic nature of local precipitation patterns. The consequences of these precipitation patterns on landscape water balance is also presented.

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