

PROBABILITY MODELS OF THE TWEEDIE FAMILY FOR OCCURRENCES OF RAINFALL IN ARARAS SP

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- **ABSTRACT:** *Rainfall is an important meteorological variable that has immediate impact on the climate, agriculture and economy of a region. The characterization of this variable is done through a probabilistic model, requiring adjustment of different distributions, as the time and location of the event. On the other hand, the theory of dispersion models includes both statistically and probability and provides a collection of methods related to the distributions of exponential families, for which the concepts of leasing and scale can be generalized by the concepts of position and dispersion. The Tweedie family belongs to a class of models called exponential dispersion models and can be used to model events related to rainfall. In this context, the aim of this paper is to apply these methods to adjust Tweedie family of distributions to data on rainfall Araras city, for each of the twelve months of the year, based on official data from the Center for Applied Sciences, Federal University of São Carlos weather station during the period 1972-2012. It was found that the methodology is appropriate for representing this variable and that the Poisson Composed distribution is the best fit for most months. Data analysis was performed with the aid of Tweedie exponential family models package available in R software.*
- **KEYWORDS:** *Rainfall; probabilistic models; Tweedie exponential dispersion model.*

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