

A Probabilistic Climatic Model for Predicting Seasonal Rainfall in Northeast Brazil

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This paper presents a methodology based on a model proposed by Silva for predicting seasonal rainfall in Paraíba State, Brazil. Seventy-two rain-gauge stations were employed, all of them distributed in three mesoregions in Paraíba State. A rainy season (RS) with different subdivisions was established for each mesoregion. The z_i proportions – the ratio between the cumulative rainfall of the first RS period (X_i) and the rainfall of the whole RS - were made to fit the Beta probabilistic model used for calculating the first and fourth *quintilis* and the probability of rainfall above the climatologic average for the RS second period (Y_i). The performance of the prognostic model for the period 1996-2000 was evaluated. In the period 1996 to 2000, with rainfall above Y_i average, the margin of error was less than 20 %, except for the RS8 in 2000. In 1998 - a very dry year - the margin of error was over 20 %, this for the prognostic of a minimal total rainfall. The methodology adopted proved very accurate for forecasting droughts in Paraíba State.

FORECASTING AND QUANTITATIVE PRECIPITATION ESTIMATION