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MODELS FOR PRECIPITATION TRENDS IN DOBRUDJA

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Abstract

Predicting the precipitation evolution is of big importance, especially for the regions affected by drought, where the irrigation systems are necessary. Dobrudja is a region situated in the South – East of Romania, where the drought period is about 6 month per year. Therefore, finding a model for the precipitation trend is the first step on understanding the weather evolution and its prediction. In order to evaluate the precipitation variability in Dobrudja the annual and monthly precipitation series collected from 1965 to 2005, at ten meteorological stations have been studied. Two types of models for the trend have been designed, for the groups of precipitation series formed after the variance analysis, using a version of wavelets technique and smoothing splines, proposed by us. The results comparison has also been provided. The implementation was made using R software.

Key words: precipitation, residual, splines, time series, wavelets

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