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Thesis Title	*Rainfall trends over Greece based on the predictions of regional climate change models*
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Summary	The main goal of this study is to estimate rainfall trends over Greece, using corrected predictions of the regional climate change model RACMO2/KNMI, during the future period 2016-2100. In the first part of the study, measured or projected by the model daily, monthly and annual rates of rainfall are considered, at 13 stations in Greece, during the period 1979-2004 (which is defined as 'control period'). A comparison between the measured and projected values indicates that a correction application to projections would be necessary to better approximate the measurements. In order to eliminate systematic errors in the projected daily rainfall, the Distribution Based Scaling method (DBS) is employed. DBS is based on the assumption that the frequency distributions of the projected values should follow the same distributions with the observations. Thus, Pearson III distribution (found as well applied on the daily rainfall values, according to L-moments method) is used to correct the projected rainfall values. The corrected projected values are compared with the observed ones to ensuring the appropriateness of the use of these adjustment methods. The results indicate that the corrections applied on the projected daily rainfall values do not improve the daily, monthly or yearly values satisfactorily, but they improve the average annual values. In the second part of the study, the similarity in the trends of observed, projected or corrected projected rainfall is investigated, during the 'control period'. Furthermore, the trends of the projected or corrected projected rainfall are calculated, during the future period 2016-2100, for each station. According to the results, during the period 1979-2004 the trends of annual rainfall are mainly negative. The same conclusions can be drawn for the future period 2016-2100.
Key words	Distribution Based Scaling, Pearson III distribution, Rainfall trends, Future climate
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