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# LONG-TERM TREND ANALYSIS OF ANNUAL PRECIPITATION FOR SHORT PERIODICITIES

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## Abstract

The climate variability analysis is often performed by studying trends in hydro-climatic series. In this study, precipitation series trend analysis was performed by applying the parametric test of linear regression and the non-parametric tests of Mann-Kendall (MK) and Pettitt's. Trend tests were applied on the original precipitation series and the denoised precipitation series via the discrete wavelet transform (DWT). This study aims- to evaluate the classical and new approaches used for analyzing precipitation trends. The paper presents a new approach for analyzing non-significant trends by combining Pettitt's test, linear regression, and discrete wavelet transforms. The most effective periodic component of the time series was determined, and precipitation series were transformed for a short-term periodicity scale (2-years). The trend analysis results obtained from the denoised precipitation series had presented more significant results than those of the original series.

*Key words:* change point, discrete wavelet transform, precipitation, trend analysis

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