



## **Assessment of the influence of the calibration period choice on empirical statistical downscaling modeling**

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The purpose of this study is to examine the influence of the calibration period on the results of empirical statistical downscaling (ESD). ESD establishes empirical relationships between local climate variables [predictands] and the characteristics of large-scale synoptic atmospheric circulation patterns from global climate models(GCM) [predictors]. The study methodology compared different procedures for selecting the calibration and verification data from predictand historical daily time series including: random selection, split-in-half, moving window and stratified sampling. The analysis included predictands important for hydrological applications such as precipitation and temperature. The influence of the method of selecting the calibration period on ESD outputs is evaluated over the 1961-2000 period at several sites representing a range of climate regimes (mid-latitude, sub-tropical and semi-arid). The sensitivity of ESD results to the calibration period selection method will be presented and discussed along with potential applications. The results will highlight also the limits and constraints of linear ESD approach in sub-tropical and semi-arid areas as compared to midlatitude regions.