



Global assessment of Climate Change Impact on drought dynamics in drought hotspots

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We analyse projected drought properties in the 21st century under different climate change scenarios in four regional hotspots: North-eastern Brazil, Eastern Nile, Limpopo and Niger. We employ a multivariate approach by considering changes in drought duration, intensity, and frequency with respect to the 20th century baseline period.

This study uses wavelet coherence time-series analysis to compare the performance of two multi-scale drought indices, the SPI and the SPEI, in detecting past and future drought dynamics in the regions of interest. Using state-of-the-art climate impact projections from the first Intersectoral Impact Model Intercomparison Project (ISI-MIP), we are able to assess the impact of including biogeochemical information on the drought projections and correlations between drought and large-scale climate dynamics, as represented by ENSO and monsoon indices. We also consider the potential for simultaneous drought events across non-adjacent regions, which have been triggered in the past by climate anomalies such as El Nino and Monsoon.