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Detection of anthropogenic influence on the Western african climate and attribution of causes.

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The present study investigates the impact of anthropogenic forcing on the western African climate. Observation and model results are analyzed and compared over 1950-2000 to identify potential human-induced climate change at regional scale.

Fingerprint-like detection method accounting for both spatial pattern and temporal variability is applied to near-surface temperature and precipitation to extract the signature of the forcing from anthropogenic greenhouse gases and sulfate aerosols concentration changes.Ensemble numerical experiments are performed using the Arpege-climat atmospheric global circulation model characterized by a 60km resolution over western Africa. Emphasis of the study is laid on seasonal and intra-seasonal variability and associated mechanisms.