



## **Atlantic control of the late-19th century Sahel humid period**

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Precipitation regime shifts in the Sahel have dramatic humanitarian and economic consequences such as during the 1970's and 1980's severe droughts. Though Sahel precipitation changes during the late 20th century have been extensively studied, little is known about the decadal variability prior to the 20th century. Some evidences suggest that during the second half of the 19th century the Sahel was as much or even more rainy than during the 1950's and 1960's. Here, for the first time we reproduce such anomalous Sahel humid period in the late-19th century by means of climate simulations. We show that this increase of rainfall was associated with an anomalous supply of humidity and higher-than-normal deep convection in the middle and high troposphere. We present evidence suggesting that Sea Surface Temperatures (SSTs) in the Atlantic basin played the dominant role in driving decadal Sahel rainfall variability in this early period.