Hydro-CLIMATE VARIABILITY DURING THE LAST TWO MILLENNIA IN MOROCCO, INFERRED FROM HIGH RESOLUTION SPELEOTHEM RECORDS

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In this study we present the first U-Th dated and high resolution stable oxygen isotope ($\delta^{18}O$) speleothem records covering the last two millennia in Morocco. Our speleothems were collected from two caves in the Western High Atlas Mountains in Southwestern Morocco and the Eastern Middle Atlas Mountains in Northern Morocco. The new paleoclimate records reveal substantial swings of dry and humid periods with decadal to multidecadal frequencies. The Medieval Climate Anomaly (MCA) is characterized by generally dry conditions, while wetter conditions are recorded during the Little Ice Age (LIA) and a trend towards dry conditions during the 20th century. These observations are consistent with regional climate signals, suggesting common climate controls. Based on statistical analyses, we emphasize that the mean moisture inflow from the Atlantic Ocean during the last two millennia in Morocco remained under the combined influence of the Atlantic Multidecadal Oscillation (AMO) and the North Atlantic Oscillation (NAO) with possible interactions with local mechanisms such as the Sahara low.