



## **Multidecadal variability of summer temperature over Romania and its relation with Atlantic Multidecadal Oscillation**

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We investigate the multidecadal variability of summer temperature over Romania, as measured at 14 meteorological stations, with long term observational records. It is shown that interdecadal variations of summer temperature are significantly correlated with the Atlantic Multidecadal Oscillation (AMO). The first principal component of summer temperature over Romania presents a strong multidecadal variation. A cold period between 1902-1920, was followed by a very warm period between 1925-1965. Since around 1990, the time series shows the indication of a new warm period. These extreme phases are strongly correlated with the phases of AMO index. High values of PC1 of summer temperature over Romania are strongly correlated with anomalously high SST over the entire North Atlantic basin. This monopolar structure of the SST anomalies is associated with AMO. Using a recently published long-term reconstruction of daily circulation patterns in the North Atlantic region, we show that interdecadal temperature variations over Romania are induced by AMO trough modulation of the frequency of two circulation patterns, during summer. These results have implications for predicting the evolution of summer temperature over Romania on interdecadal time scales.