



## **Atlantic Multi-decadal Oscillation influence on weather regimes over Europe and the Mediterranean**

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We analyze the influence of the Atlantic sea surface temperature multi-decadal variability on the day-by-day succession of circulation patterns (i.e. the “weather regimes”, or “weather types”) over the Euro-Atlantic region. In particular, we examined the variability of occurrence frequency of weather types from 1871 to present. This analysis is conducted by applying a clustering technique on the daily mean sea level pressure field provided by the 20th Century Reanalysis project, which was successfully applied in other studies related to this one. We found significant changes in the frequencies of certain weather types associated with the phase shifts of the Atlantic Multi-decadal Oscillation. These changes are consistent with the seasonal surface pressure, precipitation, and temperature anomalies associated with the AMO shifts in Europe.