



Influence of the Atlantic Multidecadal Variability on the Winter European Climate in EC-Earth 3.1

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Atlantic Multidecadal Variability (AMV) is known for being able to influence the mid-latitude climate variability, especially over the European region. In this work we assess the impact of the wintertime AMV in a group of 200-year atmospheric-only simulation performed with EC-Earth 3.1. We force the atmosphere with positive and negative AMV-like SSTs and Sea Ice Concentrations patterns: firstly we apply the AMV anomalies to the whole North Atlantic ocean, hence only to the extratropics (north of 30°N) and finally only to the tropics (between 0° and 30°N), for a total of 6 experiments. Preliminary results show a wintertime NAO-like signal associated with a shift of the jet stream and changes in the blocking frequencies, leading to a negative NAO during positive AMV and viceversa. Surprisingly, the bulk of the signal is caused by the tropical anomalies, and it is associated with the changes in tropical precipitation along the Equator. Indeed, the NAO-like response is almost negligible when the AMV anomalies are applied only to the extratropics.