Geophysical Research Abstracts
Vol. 16, EGU2014-10392, 2014
EGU General Assembly 2014

North Atlantic Ocean as a driver of observed northern hemisphere atmospheric variability

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Observations indicate variations in Atlantic SST may drive large-scale atmospheric circulation changes, and thus contributing to observed low-frequency variations of northern hemisphere climate. AGCM experiments have shown that the warming of the North Atlantic may have driven the observed atmospheric circulation changes during the 1950-60 period. Furthermore, the winter conditions could only be simulated by resolving the stratosphere. Results from stratosphere resolving (high-top) coupled models support these findings. Here we extend on previous work by performing an ensemble of stratosphere resolving AGCM experiments for the period 1870 till present, driven with observed SST conditions in the North Atlantic. The degree to which the observed atmospheric changes can be reproduced will be discussed.