Geophysical Research Abstracts,
Vol. 11, EGU2009-1867, 2009
EGU General Assembly 2009

Role of external forcing for the low-frequency variability of the Atlantic meridional overturning circulation

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In order to make reliable forecasts of the Atlantic meridional overturning circulation (AMOC) it is essential to advance understanding of the detailed mechanisms that govern AMOC variability. Here we investigate the role of external (solar) forcing for low-frequency variations of the AMOC. The study is based on millenium-scale (year 800 to present) integrations with the coupled atmosphere/ocean general circulation model ECHAM5/MPI-OM forced by reconstructions of the solar activity. Concerning the processes that govern the AMOC variability, the main focus is put on the deep water formation in the subpolar North Atlantic. Apart from the AMOC also the low-frequency variability of the North Atlantic subpolar gyre is investigated.