



The Atlantic Meridional Overturning Circulation's impact on surface climate and subsurface ocean temperatures under the Last Glacial Maximum conditions: a model-data comparison

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The state of the Atlantic Meridional Overturning Circulation (AMOC) during the Last Glacial Maximum has been subject to debates for a long time. Here, we propose to examine the climatic signature of different AMOC states for models run under Last Glacial Maximum conditions and compare these simulated climates to available paleoreconstructions. In particular, we will make use of the results from the MARGO project (Multiproxy Approach for the Reconstruction of the Glacial Ocean surface, MARGO Project members, Nature Geoscience, 2009), which has recently provided a re-evaluation of the Last Glacial Maximum (LGM) Sea Surface Temperatures, based on different proxies and common calibrations for each proxy and which includes estimates of the uncertainties in the SST reconstructions. As a first step, we will compare LGM simulations from the LOVECLIM model and from the IPSL_CM4 model, which present different Atlantic Meridional Overturning Circulation (AMOC) strengths. The simulations will also be compared to recent subsurface temperature estimates based on the habitat suitability for deep coral reef growth and to terrestrial data. We will look for factors explaining the differences between model results and will examine whether the MARGO, deep coral and terrestrial reconstructions allow to discriminate between the different models/AMOC states. The comparison will be extended to PMIP3 simulations if available at the time of the meeting.