

## **Ocean Circulation During the Last Glacial Maximum Simulated by PMIP3 Climate Models**

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Computer simulated meridional streamfunction data were obtained from several PMIP3 models, from the Last Glacial Maximum (LGM, ~20,000 years ago) and the pre-industrial Holocene. Meridional streamfunction has units of volume transport, and is a measure of the strength of the zonally-integrated meridional water flow in an ocean. We evaluated the difference between both time periods, by taking yearly averages in a time span of 50 years for each model in both periods, and subtracting, for each model, the averaged values for the LGM and the pre-industrial Holocene streamfunction. We defined two regions, the Atlantic Ocean, between 30° S and 60° N, and the World Ocean, containing all of Earth's water masses. We identified the areas where the difference in water transport is most conspicuous, finding a 50% strengthen of the Atlantic Overturning Circulation in the LGM, as averaged from all the PIMP3 models used. Current work is aimed at understanding the reason for the circulation changes by studying correlations with changes in other relevant variables, such as the potential density contrast between and within ocean basins. In the future we will investigate the effects of the circulation changes on the carbon cycle.