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Northern hemisphere storm tracks and precipitation changes during the Last Glacial Maximum in PMIP2 coupled models

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Storm tracks are an important component of the climatic system since it helps transporting heat, moisture and momentum fluxes from the low to the high latitudes and are responsible for most of winter precipitation in the mid-latitudes.

Using ocean-atmosphere coupled models participating to the second phase of PMIP (Paleoclimate Modelling Intercomparison Project), we study the northern hemisphere storm track activity changes under Last Glacial Maximum conditions. The results show that this paleoclimate is interesting in terms of atmospheric dynamics and modelization purposes since the North Atlantic eddy activity does not respond linearly to the mean baroclinic changes in this region and since a large dispersion in the response of the models is found. Winter precipitation changes are partly related to storm tracks activity changes, but also to globally cooler conditions and to modifications in the stationary waves.

Keywords: Last Glacial Maximum, storm tracks, precipitation, coupled models, PMIP, mid-latitudes