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Past and future polar amplification of climate change: climate model intercomparisons and ice-core constraints

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Unfortunately, author corrections to Figs. 2, 3a, b, and 4a, b were not carried out.

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Fig. 2 Annual mean global temperature changes simulated by a variety of climate models run under similar boundary conditions. The full range (*dashed line*), mean (*cross symbol*), 25th (*lower bold dash symbol*), 50th (*grey square symbol*), 75th (*upper bold dash*

symbol) percentiles of the various model results are calculated from the distribution of the various model results (see Table 2). The “fix”, “slab” and “cpl” abbreviations refer to different configurations of models used and are described in Sect. 3 and Table 1

Fig. 3 a Central Greenland polar amplification (defined as the ratio between central Greenland and global annual mean temperature changes) simulated by climate models. The full range (*dashed line*), mean (*cross symbol*), 25th (*lower bold dash symbol*), 50th (*grey square symbol*), 75th (*upper bold dash symbol*) percentiles of the

various model results are calculated from the distribution of the various model results (see Table 2). “corr” stands for elevation-corrected temperature values (see text). **b** Same as (**a**) but for central eastern Antarctica. Note that the vertical scale is half as small as for Greenland

Fig. 4 a Comparison of Last Glacial Maximum to control central Greenland annual mean temperature change simulated by climate models (PMIP2 coupled ocean-atmosphere simulations only) with the range of paleoclimatic reconstructions. *Filled black squares* show direct model results. *Open black squares* show model results corrected from LGM to control ice sheet elevation changes (“elevation corrected” results). *Grey squares* show model results corrected from elevation changes and precipitation weighted (“seasonality corrected” results). *Horizontal long-dashed lines* reflect the range of temperature change derived from Greenland borehole thermometry. *Short dashed lines* correspond to slopes of 1, 2 and 3 for reference. A linear regression calculated on the results of these four models is also displayed (*solid black line* and regression result). Values below zero are not displayed (results of ECBILT CLIO with corrections). **b** Same as (a) but for central Antarctica.

Horizontal long-dashed lines reflect the range of temperature change derived from Antarctic ice core water stable isotopes. **c** Same as (a) but for future climate change simulations. *Open black squares* represent $4 \times \text{CO}_2$ simulation anomalies, and *filled black rhomboids* $2 \times \text{CO}_2$ simulation anomalies. The *solid line* is a linear regression on all the simulation results. The *black dashed lines* represent lines with slopes of 1 and 2. **d** Same as (b) but for future climate change simulations. *Open black squares* represent $4 \times \text{CO}_2$ simulation anomalies, and *filled black rhomboids* $2 \times \text{CO}_2$ simulation anomalies. The *solid line* is a linear regression on all the simulation results. The *black dashed lines* represent lines with slopes of 1 and 2