Clim. Past Discuss., 2, S451–S452, 2006
www.clim-past-discuss.net/2/S451/2006/

Climate of the Past Discussions

Interactive comment on "Past temperature reconstructions from deep ice cores: relevance for future climate change" *by* V. Masson-Delmotte et al.

V. Masson-Delmotte et al.

Received and published: 11 October 2006

We thank K. Cuffey for his comments on our manuscript. We apologize for the writing style. We note his concern for the lack of focus of the manuscript. Because we thought that climate modellers and paleoclimate researchers would be interested by the relevance of ice core work in terms of future climate change, we thought that there would be a need for a detailed explanation of our methods and also for a discussion of several aspects of this relevance.

We have tried to improve the referencing.

We have mentioned the role of ice sheet elevation changes in reconstructions of Greenland temperature changes.

We have slighlty increased the discussion of the role of dust and vegetation cover on LGM cooling magnitude.

We have modified the sentence on the asymmetry of forcings to make it clearer that we discuss the north south asymmetry of the latitudinal distribution of radiative forcing.

Finally, K. Cuffey raises a point concerning the use of a 1000 year period to calculate the pacing of past temperature changes versus projected future changes. The choice of such a time period was motivated by the following arguments : - the temporal resolution of the Antarctic record (20 to 50 years at Dome C for the periods of interest) - the temporal scale of temperature changes recorded in Antarctica.

We agree that this time period raises several problems : - the climate projections have been run on shorter time periods (2 centuries) - this may lead to an underestimation of the onset of rapid events in Greenland.

We could not find a more satisfying solution that would apply for both poles and climate simulations, with a reliable use of the temperature reconstructions. So we kept this time interval but added a discussion of its pertinence.

Interactive comment on Clim. Past Discuss., 2, 399, 2006.