

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: 25 September 2006

The interactive comment posted by W. Ruddiman as a referee of the paper suggests improvements on the manuscript. We thank W. Ruddiman for his suggestions.

In a revised version of the paper, we will take these suggestions into consideration, by

- removing overlapping introductions (p 409);
- adding suggested key references pointing to the role of precession in driving climate changes at low and high latitudes;
- discussing the role of ablation and not only moisture fluxes in the reponse of ice caps (but it is still an open question to understand how both hemispheres are to undergo

transitions simultaneously);

- discussing more clearly the statement about the precession variations and CH₄ fluctuations. Although CH₄ variations exhibit clearly precessional signals, their evolution during the course of interglacial periods remains more complex than a pure linear relationship with summer insolation at a given latitude (see for instance MIS 11).

- discussing the past versus future role of CO₂ changes. We agree that past CO₂ variations act as a climate feedback, whereas the anthropogenic CO₂ increase is a forcing (but the actual CO₂ and climate evolution will result both from the anthropogenic forcing and the carbon cycle / climate feedbacks). In both cases, it is expected that CO₂ variations are associated with similar climate radiative forcing effects.

The minor issues will be taken into account.

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

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Interactive Discussion

Discussion Paper