

## ***Interactive comment on “Direct North-South synchronization of abrupt climate change recording in ice cores using beryllium 10” by G. M. Raisbeck et al.***

**G. M. Raisbeck et al.**

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### **Replies in bold**

The comments from the two reviewers are generally positive and suggest that it will be possible to prepare a paper that is acceptable for CP. I would ask the authors to consider and answer all the points made by the reviewers, and to be especially careful:

(a) to explain how the match was done, and to discuss possible other matching scenarios. This is especially important since this paper will be part of this "dating" special issue. So please don't hesitate to give more technical details.

**We now give more details on the matching procedure, which has been modified**

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**outside the 10Be peak region, including a Table of the tie points used.**

(b) to comment on the flux vs concentration issue, and on how confident you are that the individual centennial scale Be-10 excursions in an individual ice core always represent a global scale event.

**We emphasize that, while we are confident about the 10Be tie points in the peak region, we are less confident about matching variations outside this region, mainly due to the present limitations of the GRIP record.**

(c) to make more reference to the EPICA community members (2006) paper.

**We now refer to this paper in the Introduction.**

(d) to recall how your work was used for the construction of the EDC3/EDML1 time scale.

**Done**

I also have several minor editorial comments:

P756, L5: "41 kyr" is redundant. You may replace by "this time period"

**Done**

P756, L9: add "observed" after "events"

**Done**

intro: you mention GRIP and GISP2, but you do not speak explicitly about NGRIP.

**Yes we do, 4 lines later!**

intro: speak about EPICA community members (2006)

**See point (c) above**

P758: last two paragraphs are somewhat redundant with what has been said before in

the intro. You may want to be a bit more direct here.

**After carefully reconsidering these two paragraphs, it is not obvious to us that the information here, which is mainly for readers unfamiliar with  $^{10}\text{Be}$ , is redundant with what has been said before.**

P759, L5: "than \_what\_ we have used"?

**Done, but not really necessary**

P759, L19: missing space "200 Be events"

**Done**

P760, L7: extra dot before "(Raisbeck et al"

**Done**

perspectives: the style may be improved here, there are redundancies.

**This portion has been rewritten and shortened.**

FIG1: use "AIM" instead of "ATM"

**Done**

FIG1: the  $^{10}\text{Be}$  flux EDC should be in  $\text{atoms m}^{-2} \text{ s}^{-1}$  ( $\text{m}^{-2}$ , not  $\text{m}^2$ )

**Done**

Interactive comment on Clim. Past Discuss., 3, 755, 2007.

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