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Climate of the Past Discussions

Interactive comment on "Temperature and precipitation signal in two Alpine ice cores over the period 1961–2001" *by* I. Mariani et al.

Anonymous Referee #3

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Review of Mariani et al. "Temperature and precipitation signal in two Alpine ice cores over the period 1961-2001"

For Climate of the Past

30 January 2013

The authors present an analysis of ice core isotope and accumulation data, in an attempt to correlate the two proxies with temperature and precipitation data from a dense network of meteorological observations in the European Alps. There are very few ice core locations that such an analysis could be attempted, given the usual paucity of meteorological data in remote regions. In that sense alone, I think this is an interesting and valuable analysis that deserves to be published in CPD. The manuscript is gen-

erally concise, well written, and argued logically and clearly. I really have only a few minor points for the authors to consider during revision.

Comments:

Section 2.1.2 – I think it would be valuable to have a discussion of errors inherent in the accumulation estimates, with corresponding error estimates given on Figs. 3 and 4. Because this is such a critical part of the analysis, I think it deserves more attention so readers can properly evaluate the findings. Also, it is not clear to me what the reduced X2 values given near the end of the section represent.

Section 3.2, pg. 5877, line 5 – I don't really understand the argument explaining lag = -1 correlation between precipitation and the Fiescherhorn data. The authors state it is explainable via the dating uncertainty. I imagine that any dating errors are randomly distributed, and therefore should not create a consistent offset with meteorological data. Moreoever, the authors state that the observed correlation pattern is "expected" for the Northern Alpine region. Why is that?

Interactive comment on Clim. Past Discuss., 8, 5867, 2012.