**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.

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Reply to Anonymous Referee # 3

We thank the reviewer for the helpful suggestions.

Section 2.1.2

We agree with the reviewer that it would be valuable to have an estimate on the error of the accumulation. However, it is difficult to quantify the errors. As we stated in the manuscript (section 3.2, line 5-7) the largest error is induced by the dating uncertainty, whereas for the upper part of the glaciers considered in our study the error introduced by the thinning effect is negligible compared to the interannual variability. With the X2 we meant to indicate the goodness of the fit using the simple Nye model for Alpine

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glaciers, which was developed for the uppermost part of vast ice sheets.

Section 3.2, pg. 5877, line 5

Maybe the term lag is misleading. We introduced a plus/minus one year shift reflecting our dating uncertainty and observed a significant spatial correlation with an offset of minus one year. With one year dating uncertainty the most likely result is an offset of one year. With a higher dating uncertainty the errors would be in fact randomly distributed and could compensate each other.

With expected pattern we mean that Fiescherhorn likely reflects the precipitation over the Northern Alps and Northern Switzerland, due to the orgographic barrier, exactly as Grenzgletscher correlates with precipitation over the Southern Alps, see for example, Sodemann and Zubler, 2009, Int. J. Climatol.

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