

## ***Interactive comment on “Millennial-length forward models and pseudoproxies of stalagmite $\delta^{18}\text{O}$ : an example from NW Scotland” by A. Baker et al.***

**A. Baker et al.**

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Denis Scholz makes the very valid observation that although oxygen isotope fractionation is not observed in the modern cave environment, that it might have occurred in the past. However, although disequilibrium can never be completely ruled out, one would expect this to have resulted from significant changes in the saturation state of the waters or humidity of the cave, which should be reflected in the crystallization style or other aspects of the chemistry. This is not observed in either stalagmite. Therefore, in the absence of such evidence, we believe a climate forcing has to be the most probably explanation. However, we proposed to add new sections of text in part 3 (first paragraph) and part 4.3 (final paragraph), which we hope cover fractionation processes.

We agree with the specific editorial comments and will edit the text to respond to all but

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one suggestion. That is, we feel that the IsoGSM model has a very detailed description and referenced, and we suggest that no further text is needed. However, we do agree that further clarification is needed to make it clearer to the reader that the oxygen isotope input series are independent of temperature and precipitation, and also to identify the number of simulations available and used in each case.

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Interactive comment on Clim. Past Discuss., 8, 869, 2012.

CPD

8, C468–C469, 2012

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