Answer to reviewer #2

Without the file with the reviewer annotations, we did our best to take into account the reviewer comments/advices as follows:

- Symbols θ and λ should be used with more care. We suggested a scheme that now becomes more and more accepted (Pack & Herwartz, 2014) with θ being used for a particular physical process (equilibrium or kinetic) and λ for regression on groups of materials NOT related through a well-understood single process and for the slope of a chosen reference line (then with index RL).

This is clarified accordingly in the introduction section (L 111-114), in the text (grey underlining), in tables and on fig. 6.

- The δ17O scaling to SMOW is still not clear. The authors cite studies that are either outdated or even did not analyze SMOW water. Be more careful here. You're dealing with water - "rock" interaction, so rocks need to be really on SMOW scale (better SMOW-SLAP). That's not trivial but can be done better than it appears in the current version of the manuscript. I put on remarks.

The 'vs VSMOW' was removed when dealing with ^{17}O-excess in two places in the text. As we don't have any file with reviewer 2 remarks it is hard to understand where the text can be further improved.

- Meteoric water lines are known to span a curve. Hence, a "line" should not be longer used! I attach a compilation of some recent meteoric water analyses (I guess there are even more published now):

We now refer to the meteoric water trend. This is only to explain how the ^{17}O-excess was defined. The paragraph has been modified as follows: " It has additionally been shown that meteoric waters plot along a trend with a slope λ of 0.528 ± 0.001. The departure from this trend is conventionally called ^{17}O-excess ($^{17}O\text{-excess} = \delta'^{17}O - 0.528 \times \delta'^{18}O$) (Luz and Barkan, 2010). **"**

- The kinetic fractionation in association with diffusion of vapor into the free atmosphere seems not to be considered as cause for variations of Δ'17O. Only the evaporation in leaves is considered. I may be wrong and the effect on the composition of the rain water is outbalanced by the larger effect due to evaporation in the leaves. A short comment on that would be welcome.

The formulation of the kinetic effect during evaporation of water from the leaf is directly linked to the coefficient of diffusion of water vapor molecules in the free atmosphere in the classical formulation of isotopic enrichment of leaf water from the Craig and Gordon equation adapted to leaf (e.g. Cernusak et al., 2016). This kinetic effect is the driver of the ^{17}O-excess signal in leaves (Landais et al., 2006; Li, Levin et al., 2017) and hence, in phytoliths, as explained in the manuscript. We checked everywhere in the manuscript, when diffusion and kinetic effect are mentionned, that the formulation do not lead to any ambiguity. We thus do not understand what the reviewer means exactly with this comment. We do not understand either the reference to Δ'17O that is never used in the manuscript.

- In a few instances, still too many digits or precision are given.

One correction was made (L358). We did not find other occurrences.