

December 10, 2015  
Revision CPD article - Abels et al.

Dear Jerry,

Thanks for having us revise the paper in the Special Issue in Climate of the Past and being patient waiting on our revision.

We fully agree with you and the reviewers that the assumption of constant background conditions from PETM to ETM2 is not a good one. In the revision, we account for changing background  $p\text{CO}_2$  conditions to try explaining the apparent pedogenic-carbonate PETM-CIE anomaly we find. Interestingly, this exercise shows that it is indeed possible to explain the anomaly by changing background  $p\text{CO}_2$  between the events. But, in contradiction to general believe and temperature records, post-PETM  $p\text{CO}_2$  has to be considerably lower rather than higher and so it seems likely that other soil-related local processes caused the anomaly.

You asked for magnetochron information along with the figures. There is no more information than in Abels et al. 2012 and adding that will earlier weaken the correlations than strengthen them (especially for criticasters!). In the new West branch section, we started working on constructing a extended magnetostratigraphy, but this work is not finished also because the magnetic signal in these rocks is not straightforward. We agree with you that the correlations are convincing, also because they are in line with previous magnetostratigraphy and biostratigraphy.

We clarified the figure legends along with figure 1 and 3 along with your comments. We are happy to share a document in which changes have been tracked, if you like.

We hope the issues in the paper are clarified now as indeed, as you phrased it, "our community does not need any more papers arguing against Occam's razor on faulty logic...".

Best wishes,

Hemmo