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Climate of the Past Discussions

Interactive comment on "Paleoclimate and weathering of the Tokaj (NE Hungary) loess-paleosol sequence: a comparison of geochemical weathering indices and paleoclimate parameters" *by* A.-K. Schatz et al.

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Dear Referee #1,

thank you very much for your comments on our manuscript in CPD. There seem to be several issues about the content, mainly of the materials chapter, which need to be clarified. We are going to address them step by step.

1. / Lack of information on sampling, preservation, analytical techniques etc.

We provided details on the number of samples (35), the sampling spacing (25 cm) and

the pre-treatment (e.g. air-drying at 40 °C, milling) in chapter 3.1 of the manuscript (p.6). This chapter also contains information on TOC and CaCO3 measurements, including calculations, as well as on the XRF measurement (p. 6, l. 21-24). Furthermore, the manuscript includes an overview of all XRF results as a supplement (main elements, selected trace elements, LOI, CaCO3, TOC, TIC, CaO*, CaO**, standard deviations, mean values etc.). The amount of information provided in our manuscript and the procedures are comparable to those of similar paleosol-loess weathering studies based on XRF data, e.g. Újvári et al. (2014), Varga et al. (2011), Buggle et al. (2008) or Kühn et al. (2013).

However, we are going to add additional information in the revised version of the manuscript, e.g. that the profile was cleaned before sampling (which is compulsory and usually not mentioned in publications with focus on paleopedology), sample material was sieved <2 mm prior to analyses, we used a representative aliquot from the homogenized sample material. We are also going to add more detailed information on XRF measurement.

For the magnetic susceptibility (MS), grain size and δ13C data used in our study, the reference of the original data is always indicated (Schatz et al., 2011). For details about measurement etc., the reader is referred to this publication. Repeating this information in our manuscript would be redundant, but we explained in chapter 3.3 (p. 8, l. 22-23) that all data were obtained from (i.e. measured on) the same samples. However, for clarification and ease of reference we are going to provide an extended version of the data table, including MS and δ13C, as a supplement.

2. / Stratigraphic information

A detailed stratigraphic discussion is beyond the scope of this manuscript and was previously done by Sümegi and Rudner (2001), Sümegi and Hertelendi (1998) and Schatz et al. (2011, 2012), which are also cited in the text for reference. The information most relevant for this study, including the chronology, is given in the schematic profile sketch

in Fig. 1 b).

3. / MAT/MAP absolute values and deviations

We understand that it might be somewhat confusing to discuss both absolute values and deviations in the text. We are going to clarify this where necessary.

4. / Location map of all paleoclimatic information cited in this study

Thank you for this suggestion - not all study locations are equally well known. We are going to include a simple map of Europe showing all mentioned locations as a supplement.

Sincerely, Ann-Kathrin Schatz & Co-authors

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Interactive comment on Clim. Past Discuss., 10, 469, 2014.