Dear editor and authors,

this study by de Boer et al. identifies a gap in knowledge and an opportunity to explore a known method and its applicability to questions that haven't been addressed before. It is a well-designed study and an overall well-written manuscript. The background and methods of this study are explained sufficiently and concisely. Results are summarised in a logical manner. The discussion and conclusions drawn are sensible and understandable. There are a few technical things that I think should be addressed.

First, the use of the phrase "OSL dating" (e.g., line 87) or "OSL signal" (e.g., line 268). The authors use this term to refer to all their measurements and signals (quartz AND feldspar). I think this might be confusing for some readers. To me, OSL dating/signal refers to the dating of or signal from quartz only. I would suggest the term "optical dating" in places where the authors mean to refer to both quartz and K-feldspar measurements. In places where only the signal from K-feldspar is being discussed, the term "IRSL signal" might be better.

Second, I think it would be helpful to expand on how the dose rate was obtained. What are the dose rate values for alpha, beta, gamma, and cosmic-ray dose rate portions? As K-feldspar samples haven't been treated with HF, was the alpha dose rate considered? A short paragraph or table in the supplementary material would be sufficient here.

The radial plots in Figure 6 need a bit of amending as for panels (b) and (d) the labels of the z-scale are very difficult to read, it almost looks like the lower De range was cut off and sometimes parts of the plots are overlain (panel d). By changing the scaling factor of the z-axis and centering the plots around the CAM estimate (instead of the bMAM), this would be improved. And the bMAM estimate could still be added as an extra line. The labels of the y-axis (standardised estimate) should all be ±2 (or +2 and -2) as shown in panel (c).

For Figure 7, I think it would be helpful to add trendlines for each of the datasets to help the reader identify the increasing or decreasing trends straight away. On first look at panel (b), it is easy to miss the "outlier" for each signal which makes it seem like there is hardly any trend visible.

The caption for Table 2 is slightly confusing - "All luminescence ages refer to the date of sampling: Oct 2019." What do you mean by that? Is there any way you can phrase this differently or explain what you mean?

And last, the authors define an acronym for organic matter "OM" (line 129). However, this acronym is defined again the exact same way in line 134 and then never used again. Since this section (3.1, lines 124 to 136) is the only place where organic matter is discussed, I think the use of the acronym is not justified and hinders the flow of the paragraph. My suggestion would be to either remove the acronym entirely or actually use the acronym (only) when it is mentioned the second time.

Overall, I think this is a promising study and I hope my comments help to improve the manuscript.

All the best,

Maria Schaarschmidt