

# ***Interactive comment on “TephraKam: Geochemical database of glass compositions in tephra and welded tuffs from the Kamchatka volcanic arc (NW Pacific)” by Maxim V. Portnyagin et al.***

## **Anonymous Referee #2**

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I believe that this is a paper that is worthy of publication. It is the culmination of a thorough analysis of many of the tephra and weld tuff deposits produced by volcanoes in Kamchatka. This original data will prove invaluable to researchers working in the region and also on a wider global scale, where ultradistal tephras are now being found. The geochemical data is of a high quality and detailed explanations are provided on the analytical conditions of the instruments used to produce the results.

The issues I have with this paper that need to be addressed are as follows and I have also highlighted them in the attached PDF file.

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1. There is no mention of Miocene samples in the Abstract. A minor point, but needs correcting.
2. The discussion on tephra sample preparation for analysis on page 4 needs to include some reference to other studies. This has been widely discussed in the literature, but there is no reference to any other sources. Whilst the preparation of samples is thorough, it is not necessarily innovative and some acknowledgement of others is required here.
3. Page 4 discusses electron microprobe analysis and again there is no inclusion of any citations to other published work on this subject, other than some of the glass standards. This subject has been discussed in detail in the literature and some inclusion of this is needed.
4. Page 6 onwards discusses LA-ICP-MS analyses and there is more inclusion of published work on this subject here, although I would expect to see more.
5. I am not suggesting that this is done for the publication of this paper, but it would be good to see this data housed in a proper relational database. This would allow more complex searching than is currently possible with the Excel spreadsheets. Some mention of this as at least a possibility would be good.
6. Although not badly written, there are a lot of minor English issues with the text. I have tried to highlight these in the PDF file (Supplement) and I hope the authors find this useful. I do appreciate the difficulties in writing a paper in another language and I feel that they have done a good job, but the quality of the writing needs to be more consistent. I would hope the editors/publishers would also contribute to this.

Please also note the supplement to this comment:

<https://www.earth-syst-sci-data-discuss.net/essd-2019-202/essd-2019-202-RC2-supplement.pdf>

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