

## REVIEWER 2

### Summary

Harning et al present a new “quality-controlled” geochronological database for Iceland during the Late Quaternary, containing chronological data points constraining past glacier extent, relative sea level, and palaeoclimate records. The chronological data are from peer reviewed publications, PhD and MSc theses, previous compilations, and unpublished dates. The database covers both the marine and terrestrial realm, and include  $^{14}\text{C}$  ages, TCN exposure ages, and some tephra layers (Askja S, G10ka). They do not include any geomorphological data or interpretation of landforms. Data are handled to ensure FAIR principles are adopted and follows similar compilations (e.g. DATED). The downloadable data are well presented, and the added context markers are clear, allowing an understanding of the context for each age/cluster on ages.

There is some clear and intentional interpretation of data, and the quality control criteria are in places subjective. As such I am not sure if can be explicitly labelled as a database, which should be free of interpretation.

Beyond this I have a few general comments but otherwise consider the paper a valuable contribution.

We greatly appreciate Reviewer 2’s time and consideration reviewing our curated database manuscript and the general support of our efforts. Below we respond to each comment individually in blue.

### Comments

- I think it is useful and very transparent to have recalculated all the ages with all calculators, but it would maybe be useful to explain which you recommend using, or the key difference between them. For example, CREp allows the Ca production rate to be changed, using Licciardi’s values which (I believe) is fairly standard. Similar to our reply to Reviewer 1, we are reluctant to state which calculator is preferable over the others as it opens us up to criticism outside of the review process (various researchers have strong feelings on this topic). However, as we responded to Reviewer 1, we have added a reminder in Section 3.5 that CREp allows the user to choose the Ca spallation production rate, such as those locally developed from Icelandic mafic rocks (Licciardi et al., 2008).
- TCN ages should be quoted as ka, not ka BP as they are not from “BP” (1950 CE). We appreciate this suggestion and apologize for the error. The presentation of TCN ages has now been corrected.
- It depends on editorial policy, but I would quote  $^{14}\text{C}$  ages as “cal. ka BP”, but this is variable with journals. We appreciate this suggestion and will leave the decision up to the editorial staff pending acceptance of the manuscript.
- Figure 5 – which are QC 1 and which are QC2? Or are they not separated and just shown together?

Correct, QC1 and 2 dates were combined as we suggest that both are suitable for reconstruction ice limits and it simplified the presentation of the data, which we have now clarified in the figure caption, as well as for Figure 6. The curated database includes all the relevant information for any user.

- The “comment” column in the database needs to be more clearly explained. Are these comments from the original sources, or are they comments from Harning et al, and therefore interpretations of the original data?

Yes, the comment information is obtained from the original source and has been clarified in the text and Table 1.