

The revised manuscript by Wu et al. is much improved compared to the original submission and the authors have taken care to respond to all comments raised by both reviewers. I recommend the publication of this revised manuscript pending a few minor corrections as detailed below.

Kind regards,
Marthe Klöcking

Detailed comments:

1. The article is due to be published with a CC BY 4.0 Attribution license; it is unclear what license will be linked to the Zenodo dataset. Has it been checked that all licenses of the data sources in the compilation have been honoured and that CC BY 4.0 is appropriate?
2. I accept that you do not wish to compare the content of your data compilation with existing global compilations at such as those of EarthChem (<https://earthchem.org/>), GEOROC (<https://georoc.eu/>; e.g. <https://doi.org/10.25625/SGFTFN/AKMJG2>), Martin et al. (2022, <https://doi.org/10.1038/s41597-022-01730-7> and <https://doi.org/10.25625/FWQ7DT>). However, I do expect these previous efforts to be mentioned and referenced in your manuscript. Please include these references, e.g. in Sections 1 or 2 (Introduction/Database).
3. As you rightly point out, a huge benefit of this dataset lies in the large number of Chinese data that have been compiled. This fact is stated at the beginning of the manuscript but also deserves to be emphasised again in the later discussion. Conversely, global coverage for the rest of the world is comparatively sparse. While you discuss sampling bias and present methods for statistical resampling, I think it would be helpful to honestly present this regional disparity throughout the manuscript. In numbers, what proportion of the 2 million geochronological records lie outside of China? A quick check of zircon data available through the EarthChem Portal shows that the sample distribution in other, existing global compilations (~500,000 records across GEOROC, EarthChem, GANSEKI, NAVDAT and MetPetDB; see screenshot below) could perhaps be a valuable resource to complement the data presented here, prior to any statistical analysis.

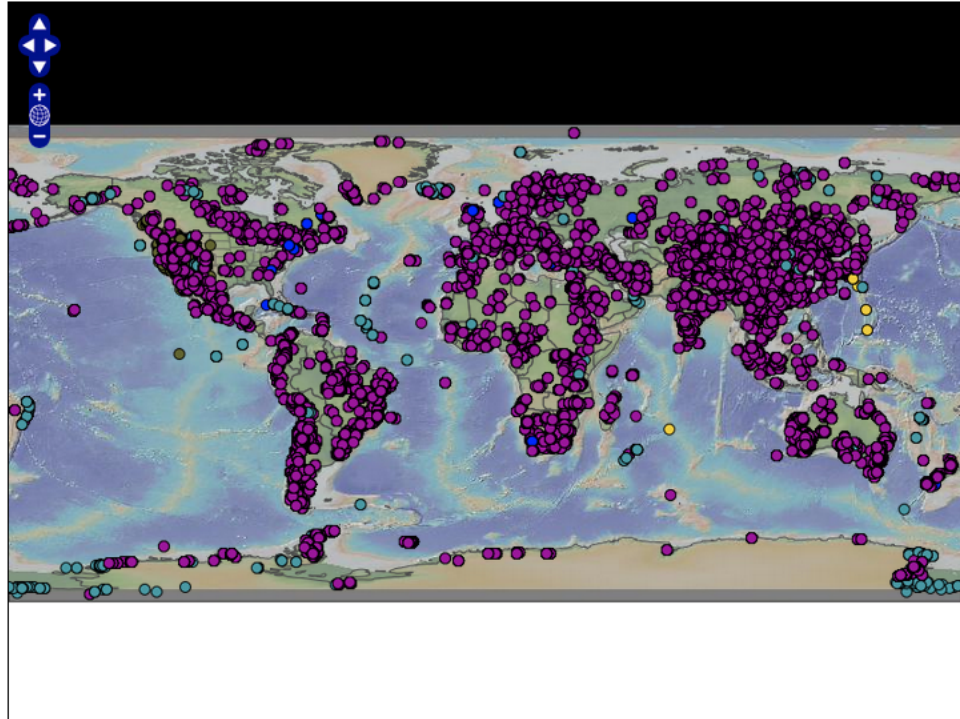
Earthchem Portal

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Earthchem Dynamic Map

The map below contains samples from the current search query. You can drag the map dynamically, as well as use the zoom bar to zoom in and out. Use shift-click to create a dynamic zoom range for more detailed zooming. To get sample details, click on the individual samples.

Legend: ● NAVDAT ● GEOROC ● USGS ● SedDB
● MetPetDB ● EarthChem ● GANSEKI@DARWIN



4. Typos & grammatical errors:

L10: word missing after “geochronological”, e.g. “geochronological records”

L12: Please remove unnecessary and subjective statement “and is by far the largest geochronological database to our knowledge”

L12: “complied” should be “compiled”

L23: reference “(Becker, 2007)” seems out of place

L38: “all of” rather than “all of the”

L56: add reference to Martin et al.; EarthChem and GEOROC compilations

L58: please rephrase “dating data points”

L59: I would use “techniques” rather than “instruments” here

L61: remove “the” before “temporally and spatially”

L150-152: the use of “etc” is jarring. Rewrite as “includes, for example, [A, B, C, ...]”

Figure 6: what does the colour scale represent? Please add label

L277: rephrase “largest known database” into a more quantitative and less subjective statement