

Response Letter to Earth System Science Data Submission

Manuscript Number: ESSD-2025-157

Paper title: OneDZ: A Global Detrital Zircon Database and Implications for Constructing Giant Geoscience Database

General response:

We sincerely thank Dr. Ware and Eider for their constructive comments, which have significantly improved this work. Indeed, the accessibility and usability of the database have long been challenging for us. This situation was particularly difficult over the past year after the Deep-time Digital Earth (DDE) program discontinued its funding to our project, resulting in the loss of technical support from professional staff, including database engineers, software engineers, network engineers, and hardware engineers.

Over the past year, website maintenance and updates have been carried out almost single-handedly by myself. I should note that I do not have a professional computer science background that I am a PhD student in sedimentology and have been learning while working on these updates. We have now implemented major updates to the website, including improvements to the data engine and community features. Meanwhile, we have initiated testing of the “Data Contribution” module within China, which has also raised some new issues. We are pleased to share that we have secured new funding, which will support further hardware performance upgrades and enable us to develop a next-generation database system based on large language models.

Discussion #1

1. I again attempted to access the OneDZ database via the web interface (<https://www.onedz.top/>), including testing different coordinate inputs and query ranges. However, I consistently encountered errors, including failed searches and download attempts. The “Failed to fetch” error persists, and it remains unclear how input

parameters (e.g., longitude formatting) should be correctly defined. As a result, I was again unable to retrieve any data from the portal.

Response:

Thank you for pointing this out. Following a server configuration upgrade in September last year, the website has been migrated to <https://onedz.top/> (please note that there is no “www” prefix). Regarding the reported issues with search and download failures, we have incorporated sample data into the new version to enable users to quickly familiarize themselves with and utilize the retrieval functions.

2. While the authors suggest that performance issues may relate to query range or network conditions, this reinforces the concern that the online database is not yet robust enough for general community use. A functional and intuitive interface is critical for a database of this nature, particularly for users without advanced technical backgrounds.

Response: Thank you for your valuable suggestions. We acknowledge that our current server performance is insufficient to meet the retrieval demands of this large-scale database. In the latest version, we have implemented spatial grid encoding to accelerate the retrieval process. However, due to network bandwidth limitations, our testing results indicate that query times fluctuate between several minutes to tens of minutes depending on access volume and regional network conditions. To prevent server process deadlock, the system dynamically terminates retrieval processes after 3-5 minutes. Therefore, we recommend that users perform medium-scale searches (at continental or national scales) only on high-quality data that has undergone complete expert review. Global-scale data can be accessed directly via the provided CSV download link.

3. While the authors suggest that performance issues may relate to query range or network conditions, this reinforces the concern that the online database is not yet robust enough for general community use. A functional and intuitive interface is critical for a database of this nature, particularly for users without advanced technical backgrounds.

Response: Thank you for your suggestion. We have now added direct links to CSV files directly on the website.

4. The manuscript has improved following revision, and the technical corrections

identified in the initial annotated PDF have largely been addressed. The text is now clearer, better structured, and more consistent in its presentation of methods and database design. A small number of additional minor comments and suggested edits are provided in the accompanying annotated PDF.

Response: Thank you for your careful review. We have updated the manuscript and completed all revisions in the latest version.