

A Rapid Platform for Building Geochemical Databases and Conducting Spatial Analysis and Publication: OnePetrology

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In the current era , big data and artificial intelligence significantly promote and enhance scientific research, and it is essential for scientists to have tools that allow them to quickly and easily build databases in their specific fields, and to utilize mature tools for analysis, visualization, and dissemination. OnePetrology is an open-source software platform for petrology and geochemistry, which has been developed under the framework of the DDE Big Science Program. It adheres to the principles of FAIR, CARE, and TRUST, and is constructed using a "1 cloud + 3 endpoints" (web, desktop application, mobile app) approach. This platform enables scientists to customize their own databases and publish them as thematic libraries on OnePetrology. OnePetrology provides a comprehensive database of global igneous rocks, and various plotting and analytical tools, and basic geological maps. All of that enriches the functionality of thematic libraries. The entire codebase of OnePetrology is open-sourced on GitHub.

<https://github.com/dingyichina/OnePetrology>

OnePetrology's website is <https://dde.igeodata.org/>, and is currently hosted at the Institute of Geology, Chinese Academy of Geological Sciences. As an open source software, it is still growing, and everyone is welcome to join in building this open platform.

