



The Geochemical Database GEOROC – What's the News?

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Since its introduction about six years ago, the geochemical database GEOROC (<http://georoc.mpch-mainz.gwdg.de>) of the Max-Planck-Institut für Chemie in Mainz established itself as a major online resource available to the scientific community. In spring 2003, together with the databases NAVDAT and PetDB it has initiated the EarthChem consortium (<http://www.earthchem.org/>), with the aim to increase the synergy between the three geochemical database efforts.

So far, GEOROC provided geochemical data published for volcanic whole rocks, minerals and inclusions from ocean islands, large igneous provinces, convergent margins, and Archean greenstone belts. With the last update, samples from representative rift and intraplate volcanic regions were added. The database now provides about 200,000 analyses published in 5,000 papers.

The web interface of GEOROC allows the selection of samples by bibliographic, tectonic, geographic, petrological as well as chemical criteria. As part of the bibliographic query, the search for the GEOROC_ReferenceNumber permits an easier reproduction of published data plots created with the help of the database. In addition to the already existing and very popular precompiled data files based on location or rock type, we have added compilations of mineral and melt inclusion analyses.

A further recent extension of GEOROC is a map application developed together with NAVDAT and the Kansas Geological Survey. The results of queries can be interpreted against geography. Interactive maps are created that distinguish samples by different symbols and/or colors according to chemical criteria. In a further step, this application will be extended to the selection of samples by drawing polygons on the maps.

The implementation of the GEOROC database to an SQL server has improved the performance of the web interface considerably, compared to the former MS Access-based version. The speed of queries as well as the possible size of data downloads increased. In addition, it removed restrictions in the possible number of simultaneous users of the database, an improvement that is essential when considering the constant increase in number of users to currently up to 10,000 per month.