

## Earthquake Database of Germany

Diethelm Kaiser, Gernot Hartmann

Federal Institute for Geosciences and Natural Resources, Hannover, Germany

The earthquake catalogue for Germany (Leydecker 2011) was integrated in the earthquake database GERSEIS of BGR. For this purpose, the database was extended and a browser based application was developed to improve the database access (Kaiser et al. 2014). The following requirements in terms of structure and functionality were considered: tracking of event parameter changes, archive of erroneously inserted events (fakes, misinterpretations), schemes of relationships among the references and sources for an event, macroseismic data points, prioritization of epicentres, magnitudes and intensities, synchronization with catalogues from other institutions. The parameters of 12,667 seismic events for the years 800 to 2008 have been integrated. 6,861 of these events could be associated to events already existing in GERSEIS. In the course of integration seismological parameters have been reviewed, they have been corrected or complemented for 68 earthquakes.

The database GERSEIS now contains instrumental and macroseismic parameters of more than 43,000 earthquakes since the year 800 until today. For approximately 38,000 events at least one instrumental magnitude is available, mostly local magnitude ML. Homogenously determined ML (BGR/SZGRF) are available since 1995 for 11,000 earthquakes. For 6,700 earthquakes macroseismic parameters are available, mostly epicentral intensity which is the most common parameter for earthquakes older than 1970. The database contains isoseismal radii for 1100 earthquakes, 150 of these have isoseismal radii of intensity 5 and larger. The database GERSEIS is accessible as web map service (WMS) through the BGR Product-center <https://produktcenter.bgr.de> and by interactive query, map display, and data download through the BGR Geoviewer <https://geoviewer.bgr.de>.

We plan to improve the earthquake database by re-evaluating important historical earthquakes, building a macroseismic database, and determining moment magnitudes from instrumental and macroseismic data.

### References

Kaiser, D., Bürk, D., Hartmann, G., Stelling, U. & Schlote, H. (2014): Integration of catalogues of historical and instrumentally recorded earthquakes in Germany in a common database – Concepts, uses, and products. Second European Conference on Earthquake Engineering and Seismology (2ECEES); Istanbul, [http://www.eaee.org/Media/Default/2ECCES/2ecces\\_esc/3202.pdf](http://www.eaee.org/Media/Default/2ECCES/2ecces_esc/3202.pdf).

Leydecker, G. (2011): Erdbebenkatalog für Deutschland mit Randgebieten für die Jahre 800 bis 2008. Geologisches Jahrbuch, E 59, 1-198.