



Lithospheric Research Infrastructure Centre as a part of the European Plate Observing System (EPOS-PL)

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Studies of deep structures of the Earth's crust using seismic methods were undertaken at the Institute of Geophysics of the Polish Academy of Sciences in the 1960s. The lithospheric research team began a series of modern international seismic experiments with digital data recordings from 1983. In the years 1997-2003 a great program of seismic studies of deep crustal structures and the lower lithosphere in Central Europe was carried out, mainly in Poland (projects: POLONAISE'97, CELEBRATION 2000, SUDETES 2003, GRUNDY 2003). Since 1995 measurements on the deep seismic sounding profiles grid (DSS) have been performed in cooperation with colleagues from Lithuania, Belarus, Ukraine, Hungary and Romania.

All major geological structures of Central and Eastern Europe between the Baltic, the Adriatic and the Black Sea have been covered by the system of the most modern seismic profiles, with a total length of over 25000 km. We also have collected data from a grid of several thousand km of DSS profiles performed during our studies in Finland, on the Baltic Sea, in Svalbard region in the Arctic and in the West Antarctica. The realization of all these experiments was possible thanks to extensive international cooperation. It is one of the largest DSS database in Europe and in the world. The Department of Lithospheric Research of the Institute of Geophysics PAS currently dispose of 150 sets of short-term, 10 broadband land seismic stations and 4 broadband oceanic seismic stations (OBS) for field research. Several seismic projects are currently in progress, so looking ahead more data will be added to our database in following years.

Our main goal is to create a modern database of seismic records and interpretation of results from deep seismic research projects, collected since 1983, as well as contemporary ones. An additional element are archival registrations, some of which have already been scanned from paper records. We currently dispose of approximately 1000 files archived.

The database will contain seismic data recorded by land seismic field stations and oceanic seismic stations (OBS) along with versions of processed datasets and interpretation results. These data will be available online to the appropriate group of platform users with different levels of access and authorization. We plan to implement functionalities of creating visualization or limited processing which could be done on the available datasets.

The database structure is created on the existing CIBIS platform. Any guidelines for modifying this system will be developed. The data structure will be divided, depending on the type of project and the type of data available, into passive from long-term land or sea field recordings and from active experiments. The main data set concerns active measurements, where the majority of projects included single profiles of deep seismic soundings (DSS), but some large projects contain individual DSS profiles as well as three-dimensional measurements. We are doing everything to have our data compatible with appropriate EPOS Thematic Core Services to be able to share our data with the developed integrated EPOS infrastructure.