Abstract

The bachelor thesis focuses on the design of a spatial database of tree-ring chronologies. The theoretical part of the thesis describes database systems and the storage of spatial data in relational databases. It also reviews existing databases of tree-ring chronologies and the basics of dendrochronology. The next section describes provided dendrochronological data, which are used in methodical section of the thesis. The methodical section describes the data requirements for the created database, the process of its design and implementation within PostgreSQL/PostGIS. Subsequently, it deals with the creation of functions developed in procedural extension of SQL. The stored functions are used to improve import of data. Afterwards, the design of a data filter in the form of SQL statement is mentioned. The main result of the thesis is a spatial database that meets both data and functional requirements, contains provided data and is connectable to GIS. The thesis concludes with a summary of the achieved results and contributions to the ongoing scientific project.

Keywords: spatial database, database design, tree-ring chronologies, PostgreSQL/PostGIS, Procedural Language/PostgreSQL