Historical climate data rescue in the Slovak Hydrometeorological Institute

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Abstract
Systematic meteorological observations in our area started in the mid-19th century, after the establishment of the Central Institute for Meteorology and Geomagnetism in Vienna in 1851. This Institute has formed the first state monitoring network of meteorological stations in the former Austro-Hungary. On the territory of Slovakia number of 8 stations was in operation in the year 1860. Number of stations gradually grew and in 1914 it was on our territory about 45 meteorological stations of higher degree. Between the two world wars over 100 stations was observed. Later, till today the number of stations has not changed significantly. Valuable observations and measurements are in stations where their position was changed only marginally and their observations were without significant breaks. Such a station is Hurbanovo (Stará Ďala), which was so far observing continuously and its position remained in the same place.

Paper reports from stations are placed in the archive of SHMI. The electronic database of SHMI contains digitized climatological data consistently since 1961. Later on the portion of data from 14 stations since 1951 was added into the database. Next effort of SHMI was to extend data of daily observations as far into the past and data from Liptovský Hrádok were digitized since 1931. The time series of daily data from Hurbanovo station was extended in electronic database to the year 1872. We are currently preparing data from Liptovský Hrádok station since 1881.

As part of historical data rescue activities we have prepared a technological tool consisted from digitization, quality control and archiving of climatological data in the database system KMIS. For each period monthly weather records vary in the number measurements and observations elements, in the order of recorded data, in some variables units and observation time. Therefore we created forms for each period in MS Excel reports, identical to paper forms for easier editing. In the next step the edited data are transformed into the current shape of meteorological data forms for semi-automatic quality control data processing. A separate chapter of data rescue effort are meteorological phenomena, which were systematically began to record in the 30-ies of the last century. The occurrence and duration of some phenomena can be identified using other meteorological elements (eg. snowing). Some observers reported dangerous phenomena especially such as data on the occurrence of storms, hail or in the notes.

Our electronic database will be enriched with adding data from suitable stations with historical records, their number is estimated at about 15 stations.