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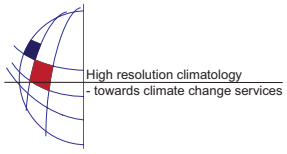

Austrian Daily Climate Data Rescue and Quality Control

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Checked climate datasets are a “conditio sine qua non” for all projects that are relevant for environment and climate. In the framework of climate change studies and analysis it is essential to work with quality controlled and trustful data. Furthermore these datasets are used as input for various simulation models. In regard to investigations of extreme events, like strong precipitation periods, drought periods and similar ones we need climate data in high temporal resolution (at least in daily resolution).

Because of the historical background - during Second World War the majority of our climate sheets were sent to Berlin, where the historical sheets were destroyed by a bomb attack and so important information got lost - only several climate sheets, mostly duplicates, before 1939 are available and stored in our climate data archive. In 1970 the Central Institute for Meteorology and Geodynamics in Vienna started a first attempt to digitize climate data by means of punch cards. With the introduction of a routinely climate data quality control in 1984 we can speak of high-class-checked daily data (finally checked data, quality flag 6). Our group is working on the processing of digitization and quality control of the historical data for the period 1872 to 1983 for 18 years. Since 2007 it was possible to intensify the work (processes) in the framework of an internal project, namely Austrian Climate Data Rescue and Quality Control. The aim of this initiative was - and still is - to supply daily data in an outstanding good and uniform quality. So this project is a kind of pre-project for all scientific projects which are working with daily data.

In addition to routine quality checks (that are running since 1984) using the commercial Bull Software we are testing our data with additional open source software, namely ProClim.db.
By the use of this spatial and statistical test procedure, the elements air temperature and precipitation - for several sites in Carinthia - could already be checked, flagged and corrected. Checking the output (so called- error list) of ProClim is very time consuming and needs trained staff; however, in last instance it is necessary.

Due to the guideline “Your archive is your business card for quality“ the sub-project NEW ARCHIVE was initialized and started at the end of 2009. Our paper archive contains historical, up to 150 year-old, climate sheets that are valuable cultural assets. Unfortunately the storage of these historical and actual data treasures turned out to be more than suboptimal (insufficient protection against dust, dirt, humidity and light incidence). Because of this fact a concept for a new storage system and archive database was generated and already partly realized.
In a nutshell this presentation shows on the one hand the importance of recovering historical climate sheets for climate change research - even if it is exhausting and time consuming - and gives on the other hand a general overview of used quality control procedures at our institute.