

EGU2020-9148

<https://doi.org/10.5194/egusphere-egu2020-9148>

EGU General Assembly 2020

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



An open rainfall-runoff measurement database

Jan Devátý¹, Hana Beitlerová², and Jonas Lenz³

¹Czech Technical University in Prague, Faculty of Civil Engineering, Dept. of Landscape Water Conservation, Prague, Czechia (jan.devaty@fsv.cvut.cz)

²Research institute for soil and water conservation

³Technische Universität Bergakademie Freiberg

Measurement of runoff events induced by natural rainfall or rainfall simulators of various construction and dimensions is a common method for obtaining data needed for run-off and soil erosion models calibration. As every simulator is different so are the methods for data collection, recording, processing and utilization. Mining the data from different sources for comparison or a common purpose can be quite exhausting as all the teams and workers use different software, workflows and structures for storing the data. The database presented is an attempt to provide a robust structure for storing experimental data together with its metadata, relationships between data sets and other information about the data collection and preprocessing. The desired state is where any record is back-trackable to the original source field record regardless if it was written by hand on paper or registred by digital logger.

The relational database is built in MySQL and provides a comprehensive structure for storing and retrieving the data and metadata. The access to the database is differentiated into multiple levels with different rights. A public web user interface allows low-level access to the data that can be viewed as tables and charts. Private web interface provides logged-in users the rights to add, delete and alter data. The web interface incorporates basic search, order and filter capabilities on the data. High level access by direct querying the DB is available for trusted users who are familiar with MySQL language and so are capable of creating their own complex queries. The direct access to the database is possible via any programing language with appropriate libraries. Querying the DB directly by code comes especially handy when preparing extensive datasheets for statistical evaluation or model calibration runs.

The database follows the “FAIR Guiding Principles for scientific data management and stewardship”.

So far the database was successfully tested on the data from the three institutions of the authors' affiliation . Further development and tuning of the DB to enable incorporation of wider range of data structures is desired and any suggestions are welcome. If you are dealing with measurements related to rainfall-runoff processes and are interested in making your data accessible, please bring a typical dataset or an overview of recorded parameters to this PICO.

The research has been supported by the research project QK1810341 of Czech National Agricultural Research Agency and the European Social Fund in the Free State of Saxony (Förderbaustein: Promotionen)