CAMELS-CH - Building a Common Open Database for Catchments in Switzerland

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Over recent years, numerous open catchment datasets have been published. In 2017, the first CAMELS (catchment attributes and meteorology for large-sample studies) dataset was released for the continental US by Addor et al. (2017). It comprises data for several hundreds of catchments including dynamic time series of daily resolution over several decades for discharge, precipitation and temperature - originally compiled by Newman et al. (2015) - as well as static basin attributes such as indices on topography, soil, geology and climate. Subsequently, similar datasets for several other countries were made or will be made publicly available. Some of these also contain additional data such as attributes on glaciers or human influence like, e.g., the CAMELS datasets for Chile (Alvarez-Garreton et al., 2018) and Great Britain (Coxon et al., 2020). Such datasets build an accessible and unified basis for reproducible and complementary research. They led to a high stimulation of hydrological research with methodologies that could not be applied before, like the joint evaluation of a large number of catchments.

We present CAMELS-CH, a new dataset for about 200 basins in Switzerland that will be released in 2022. In this collaborative project, several academic institutions and agencies work together to publish a hydro-meteorological dataset that covers both dynamic and static catchment data, and that accounts for the wide range of hydrological regimes in Switzerland, e.g., alpine environment, hydropower usage, densely populated and cultivated regions, etc. We summarize the current state of the project, remaining challenges, in particular regarding translating base data into the CAMELS format, and the final steps toward dataset publication.

References

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