



The need for a European data platform for hydrological observatories

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Experimental research in hydrology is amazingly fragmented and disperse. Typically, individual research groups establish and operate their own hydrological test sites and observatories with dedicated funding and specific research questions in mind. Once funding ceases, provisions for archiving and exchanging the data also soon run out and often data are lost or are no longer accessible to the research community. This has not only resulted in missed opportunities for exploring and mining hydrological data but also in a general difficulty in synthesizing research findings from different locations around the world. Many reasons for this fragmentation can be put forward, including the site-specific nature of hydrological processes, the particular types of research funding and the professional education in diverse departments. However, opportunities exist for making hydrological data more accessible and valuable to the research community, for example for designing cross-catchment experiments that build on a common data base and for the development and validation of hydrological models. A number of abundantly instrumented hydrological observatories, including the TERENO catchments in Germany, the HOBE catchment in Denmark and the HOAL catchment in Austria, have, in a first step, started to join forces to serve as a community-driven nucleus for a European data platform of hydrological observatories. The common data platform aims at making data of existing hydrological observatories accessible and available to the research community, thereby providing new opportunities for the design of cross-catchment experiments and model validation efforts. Tangible instruments for implementing this platform include a common data portal, for which the TEODOOR portal (<http://www.tereno.net/>) is currently used. Intangible instruments include a strong motivational basis. As with any community initiative, it is important to align expectations and to provide incentives to all involved. It is argued that the main incentives lie in the shared learning from contrasting environments, which is at the heart of obtaining hydrological research findings that are generalizable beyond individual locations. From a more practical perspective, experience can be shared with testing measurement technologies and experimental design. Benefits to the wider community include a more coherent research thrust brought about by a common, accessible data set, a more long-term vision of experimental research, as well as greater visibility of experimental research. The common data platform is a first step towards a larger network of hydrological observatories. The larger network could involve a more aligned research collaboration including exchange of models, exchange of students, a joint research agenda and joint long-term projects. Ultimately, the aim is to align experimental research in hydrology to strengthen the discipline of hydrology as a whole.