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Development of a Historical Hydrological online research and application platform for Switzerland – Historical Hydrological Atlas of Switzerland (HHAS)

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It is planned to develop and maintain a historical hydrological online platform for Switzerland, which shall be specially designed for the needs of research and federal, cantonal or private institutions being interested in hydrological risk assessment and protection measures. The aim is on the one hand to facilitate the access to raw data which generally is needed for further historical hydrological reconstruction and quantification, so that future research will be achieved in significantly shorter time. On the other hand, new historical hydrological research results shall be continuously included in order to establish this platform as a useful tool for the assessment of hydrological risk by including the long term experience of reconstructed pre-instrumental hydrological extreme events like floods and droughts. Meteorological parameters that may trigger extreme hydrological events, like monthly or seasonally resolved reconstructions of temperature and precipitation shall be made accessible in this platform as well. The ultimate goal will be to homogenise the reconstructed hydrological extreme events which usually appeared in the pre anthropogenic influence period under different climatological as well as different hydrological regimes and topographical conditions with the present day state. Long term changes of reconstructed small- to extreme flood seasonality, based on municipal accounting records, will be included in the platform as well. This helps – in combination with the before mentioned meteorological parameters – to provide an increased understanding of the major changes in the generally complex overall system that finally causes hydrological extreme events. The goal of my presentation at the Historical Climatology session is to give an overview about the applied historical climatological and historical hydrological methodologies that are applied on the historical raw data (evidence) to reconstruct pre instrumental hydrological events and meteorological and climatological parameter. I thus will present examples of index- as well as proxy based temperature and precipitation reconstructions, index- and water level based hydrological extreme event reconstructions (floods and droughts) as well examples about accounting records based reconstructions of long term changes of small- to extreme flood events.