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Solid and Liquid Precipitation in major river catchments originating in the European Alps

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In the course of the HISTALP activities new high resolution (5') gridded datasets for solid and liquid precipitation were recently produced, spanning from 1800 until 2003 on a monthly basis. For this investigation the spatial domain of this dataset, called Greater Alpine Region which covers the whole European Alps and the surrounding areas, was divided into different river catchments. Those are the coastal area in the North of the Adriatic Sea, Rhone, Po, Arno, Sava and parts of the Rhine and the Danube.

The amount of solid and liquid precipitation [mm and mm water equivalent] is analyzed for different seasons and the whole year as well as for different classes of altitude. We will present trends, variations and other statistical analysis in the last 200 years with respect to the absolute values and the ratio between solid and liquid fraction. Moreover a comparison between the different catchments described above will be shown.

This dataset allows for the first time to investigate such long time series of precipitation in the alpine region on a catchment scale and is therefore important for the assessment of past changes in the hydrologic system as well as for estimates in the future. We are looking forward to extend this study incorporating data of river discharge to find out how the rivers react on the precipitation regimes.