



Temporal and spatial structure of flood-producing rainfall in the Northwestern Switzerland

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Hydrologists are challenged to estimate extreme discharges from catchments with data of relative poor temporal and spatial resolution. In addition, the probability of occurrence of the input driver (i.e. extreme precipitation) is assumed equal to the probability of the response (i.e. extreme discharge). However, extreme discharges are complex processes derived from catchment responses to diverse meteorological inputs. A better understanding of driving precipitation inputs, catchment properties and a-priori conditions is required in order to characterize flood processes and to determine shape, volume and peak of the hydrograph of the extreme discharges. Therefore, we investigate on spatial and temporal variability of precipitation causing extreme discharges. Studying the association behavior of stations triplets in space and the temporal entropy of precipitation as an alternative event duration and intensity. Results from data of 46 catchments (<200 km²), located within Northwestern Switzerland, with temporal resolutions of 10-15 minutes are presented.