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Variability in sensitivity of catchment model parameters in Austria

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The main objective of this study is to assess the spatial and temporal changes in sensitivity of model parameters in Austria. The sensitivity is assessed for a conceptual rainfall-runoff model (TUW model) by using Latin hypercube sampling method. The spatial variability in sensitivity of model parameters is evaluated over 213 Austrian basins. The temporal variability is compared for three 10-year periods from 1981–2010.
The results show two distinct regions with different sensitivity of model parameters. In the alpine and flatlands regions, the most sensitive are parameters related to snow (degree-day melt factor) and soil (maximum soil field capacity) processes, respectively. The evaluation of temporal variability indicates that despite some changes in climate characteristics over the analyzed decades (i.e. a clear increase in air temperature and precipitation), the sensitivity changes are not large. Our contribution will discuss the factors that control the temporal stability of sensitivity changes in Austria.