



## **Investigating the impact of land use change on hydrological response through a dynamical parameter identifiability analysis**

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The impact of land use change under varying climatic conditions is often difficult to identify. This is particularly true when real data are used, as several sources of uncertainty often hide the variability in catchment response. We here use a dynamic identifiability analysis to extract trends in model parameters that can be possibly interpreted as effects of land use change. The analysis is applied to two different catchments: the Meuse catchment, and a small sub-arctic catchment in the north of Sweden. In the Meuse catchment, the analysis is useful to interpret an anomaly in the rainfall-runoff behaviour, which we attribute to forest management. Moreover, it shows how the time to peak of the catchment has sensibly decreased with time, which can be an effect of progressive urbanization. In the Swedish catchment, it shows how climate variability has induced a progressive change in land use that has strongly influenced catchment response.