



Mapping and modelling spatial patterns of dominant processes in a karstic catchment

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This paper presents a framework of combining hydrogeological mapping and hydrological modelling for dominant processes identification in karstic catchments. The aim is to identify areas with a potential of surface erosion and solute input into a karst system. Hydrogeological mapping is based on a mapping catalogue, where the items can be transferred directly to model structure and parameters. The items contain mappable properties such as geological units, overlaying loose material/debris and soils. The synthesis of these properties leads to identification of dominant hydrological mechanisms, particularly the interplay between direct infiltration and surface runoff. Model structure and a priori model parameters can be set and modified based on hydrogeological expert evaluation. This enhances the calibration and validation procedure and includes the formulation of a conceptual karst drainage module. Besides discharge data of springs water quality data (e.g. SAC 254) are used to obtain a better understanding of the karst system and its drainage characteristics and to estimate particle travel time.