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## Influence of time-varying parameterization on hydrological models

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The parameters of conceptual hydrological models often do not have direct relationships with physical catchment characteristics. It needs calibration to obtain the parameter set, which gives better representation of properties inherent in natural processes. Traditionally it has been assumed that the parameters of conceptual hydrological models are constant. However some of the catchment properties are not stationary. Hence some of the model parameters corresponding to a certain natural process may vary with time. In this study the infiltration parameter of a conceptual model is assumed to be a random variable changing in time. The model is calibrated with constrained variances of the time-varying parameter. The distribution of the model parameter at different variances is estimated in the calibration phase. During validation these distributions are used to evaluate the performance of the model. The methodology will be demonstrated on meso-scale catchments in the Neckar basin in South-West Germany. The HBV model is used for this study. It is shown that the concept of time-dependent parameters leads to better representation of properties inherent in natural process.