



Space-time variability of floods across Germany: Gradual trends, step changes and fluctuations

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The space-time variability of flood magnitude and frequency across Germany at the interannual and decadal time scale is analyzed and interpreted. The analyses are based on flood time series of 68 catchments for a joint period of 74 years. The catchments are distributed across Germany and show different flood regimes. Different statistical tests are applied to investigate different types of flood changes: gradual trends, step changes and fluctuations. In addition, changes in the mean behavior and in the variability are studied. A focus is placed on the spatial stability of changes, i.e. answering the question to which extent flood changes are coherent across Germany. The joint analysis of changes for a large number of catchments allows interpreting the causes of the observed changes. For instance, climate-related flood changes are expected to show a different behavior than changes caused by river training or land-use change.