



Are floods in Central Europe linked to large-scale climatic phenomena?

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We investigate the possible link between extreme flooding in Central Europe and various climatic indices including ENSO, NAO and PDO, which are leading modes of the global climate variability. The effect of these natural modes on floods in Europe is still poorly understood and needs further research.

The indices used in this study were selected on the basis of bibliographic evidence for factors influencing climate and/or streamflow in Central Europe. Three long records of maximum annual streamflow were chosen for the first phase of the analysis: Vienna (river Danube), Dresden (river Elbe) and Cologne (river Rhine). For these three stations, we investigated the possibility of yearly and of seasonal links between streamflow and climatic indices by using different methods such as correlation analysis and wavelet cross spectra. The overall analysis was made for the whole interval covered by the available time series but also using moving windows.

The preliminary results show a variable pattern in the relationship between streamflow and climatic indices for each of the selected stations suggesting that different indices or phases of indices may be related to different regions and seasonal floods (e.g. summer or winter floods).