



High river flows are changing - What are the main drivers in Wallonia (Belgium)?

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In the last two decades, there have been many studies detecting and analysing changes in river flow worldwide. In Wallonia (Belgium), changes have been detected in the magnitude as well as in the frequency of high flows. Nineteen percent of the sites analysed show either a positive or negative trend.

All flood related processes can be impacted by sudden or continuous changes that occur once or several times during the record period. The poster will show the preliminary results of a comprehensive analysis aiming at understanding, for each catchment, how the different factors and their combinations drive the changes in high flows. All potential factors are considered and hypotheses about the causes of change are formulated. The factors include changes in climate variables, such as precipitation and atmospheric circulation (North Atlantic Oscillation), and in land use (urbanisation in particular). Other factors such as the installation of the sewerage network or the construction of flood storage areas are also taken into account on a case by case basis. Models are used to determine the most influential factors. Once identified, the responsible factors are then used in nonstationary frequency analysis in order to obtain more accurate estimations of flood return levels. Finally, the impact of the changes and potential future changes on flood risk management in Wallonia is studied.