



Development of a flood forecasting approach based on rainfall-runoff models by comparative tests over a large sample of catchments

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In Europe, floods are the natural hazards that cause the largest damages. Given the variety of hydrological behaviours, it seems difficult today to identify methods that could be efficient for flood forecasting on a wide range of catchments. However, using large samples of catchments for the development and test of models applied for flood forecasting seems to be most valuable to derive modelling approaches of as general applicability as possible.

The objective of the presentation is to give an overview of the results obtained by a step-wise development of a flood forecasting method based on simple rainfall-runoff models. The approach is mainly empirical, but was carried out on a large sample of more than 200 catchments located in France, the United States and Australia, using several model structures that were compared on the same data sets.

The method, though simple, shows robust results in comparison with other classical flood forecasting methods when applied on this large dataset. The efficiency of the method will be illustrated on a few case studies in different climate conditions, especially on the Seine River basin where it is used for real-time flood forecasting.