



## Prediction of future hydrological hazard via the SCHADEX method

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Climate change effects on hydrological extremes are still an open question in hydrological community. Recent works do not show clear general tendencies on the frequency of occurrence of hydrological extreme events, even though some regional tendencies are statistically significant. At the same time, the SCHADEX (« Simulation Climato-Hydrologique pour l'Appréciation des Débits Extrêmes », Paquet et al., 2006) method has been developed at EDF for the evaluation of extreme discharge. SCHADEX is a simulation method for extreme flood estimation. It combines a multi-exponential weather pattern (MEWP, Garavaglia et al., 2010) rainfall probabilistic model and a conceptual rainfall-runoff model (MORDOR, Garçon, 1999), within a stochastic event simulation framework. In order to apply SCHADEX simulation to future climate scenarios several methodological points have to be taken into account. In particular, we focus on (i) the evolution of the frequency of occurrences of weather type in the future, on (ii) the possible evolution of the extreme rainfall probability distribution for a given weather type, on (iii) the application of the hydrological model in future climate and on (iv) the estimation of the future watershed hydrological states.

In this contribution, we describe the SCHADEX approach, we set some basic hypotheses for the use of SCHADEX in future climate and we show a preliminary sensitivity analysis of the extreme estimation on the previous methodological hypotheses.

### References:

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