

## **EXTREME RAIN ANALYSIS**

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In the extreme rain analysis, we are obliged to make the choice of the adjustment law. The object of this work is to study the risks coming from the application of adjustments on samples whose distribution law is unknown. In the practice, the criterium of choice of a law is based on the experience and it is possible to adjust a law at a sample, with coherent results, though the sample is not coming from that law. That's why we generated samples from a given law and then adjusted to them this law and others, to compare.

Our work is aimed on the extreme rain analysis, so we used a law with exponential decrease (Gumbel's law) as origin law. Then we have performed a simulation of Monte Carlo in order to study the effect of sampling on the choice of adjustment laws for extreme values. The principle is to generate different size samples (25, 30, 40, 50 and 100), coming from a Gumbel's law, then to adjust the Gumbel's law and an other law called TCEV (Two Component Extreme Value) in order to study the first and second kind risk (to accept a law though it is false or to refuse a law though it is true) coming from the choice of the law adjusted on Gumbelien's origin samples.