



What about uncertainty in discharge data and hydraulic modeling within flood forecast chains?

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Usually, in flood forecast chains, discharge measure and hydraulic modeling are used in a deterministic way, without taking into account their uncertainty. This study introduces a new probabilistic methodology which makes possible a quantitative evaluation of uncertainty in hydraulic computation for mountain environments with relevant sediment transport. The methodology is based on the perturbations of those parameters which rule sediment transport and affect hydraulic behaviour. Ensemble simulations have been performed with different configurations of parameters generated from a variation of the original set, according to their probability distribution through a multivariate Monte Carlo method. An application of this methodology in the Alps Regions and its utilization within a flood prediction chain are presented here.