

Hydrological risk and flood management using hydraulic structures

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Abstract The risk oriented approach in flood design demands a new quality in the cooperation between water managers and hydrologists. A design flood is not the result of a standardized hydrological procedure but the outcome of a discussion between hydrologists and water managers about practical needs, hydrological complexities and applied tools. Sophisticated hydrological methodologies are available, but not generally accepted. The simplifications of hydrological assessments used in safety-oriented design have to be replaced by more complex analyses. For this purpose some new methods, based on Copulas and stochastic–deterministic modelling are presented here.

Key words design floods; copula; fuzzy numbers; Monte Carlo simulation