

Risk management in civil engineering

advanced course

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FLOOD AND DROUGHT RISKS

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Abstract

Flood and drought risks are respectively related to extreme rainfall events and long period without any rainfall. After a presentation of the main stakes related to these two natural risks, a second part is devoted to frequency analysis, which aim is to assess design values related to target probabilities. Specific hydrological methods have been developed in order to extrapolate observed values to extreme values, using additional information such as regional information, paleoflood information and rainfall-runoff models. A third part presents the different available tools for flood and drought risk mitigation, based on structural and non structural measures. As a conclusion we address the challenge of climate change and its expected impact on flood and drought risk.