

Study Project/Master Thesis: Comparing Different Rainfall Distributions in Catchment Flood Modeling

Background and Scope

The increasing risk and damage potential of flash flood events create new challenges in the field of hydraulics and water resource management. Flash floods are impacted by numerous factors, the main factor probably being the rainfall event itself. Next to the total rainfall volume itself, the rainfall distribution has a crucial impact on the flood wave.

The task of this student work is to test and discuss the impact of different rainfall distributions and intensities on the flash flood propagation in a catchment. The student will first define different precipitation distribution and intensities and then analyse the results of simulated flash floods.

Research Question

How do different rainfall intensities and distributions influence the propagation of a flash flood?

Structure

- Literature research on hydrodynamic flood modeling in catchments
- Data preprocessing
- Run simulations with different intensities and distributions
- Compare and discuss results

Supervisor

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