

Master Thesis

Modelling of pluvial flooding: Sensitivity analysis on the careful choice of land use parameter values

BACKGROUND: Changes in precipitation patterns alter the risk and damage potential of pluvial flooding: localised heavy rainfall has repeatedly caused serious flooding and considerable damage in recent years. Consequently, in addition to two-dimensional modelling of fluvial flooding, pluvial flooding is now also being modelled two-dimensional in order to determine water depths and flow velocities during heavy rainfall events.

PROBLEM: In contrast to the modelling of fluvial floods, the modelling of pluvial floods requires more assumptions on different parameters (e.g. infiltration capacity). Furthermore, there are no gauging stations for pluvial surface runoff, which makes the calibration of pluvial flood models challenging.

GOAL: The main objective of the work is to demonstrate the sensitivity and range of plausible results of surface runoff during heavy rainfall, taking into account the variation of the relevant parameters within the established literature values, in a pilot area by numerical modelling.

START: Flexible

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