

# Study Project/Master Thesis: Sensitivity of Runoff Curve Numbers in Hydrodynamic-hydrologic Modelling

## Background and Scope

The increasing risk and damage potential of urban flood events create new challenges in the field of hydraulics and water resource management. In urban areas, the hydrologic and hydraulic processes are often combined into one model, since the main part of the rainfall is directly contributing to surface runoff. Therefore, a special focus has to be laid on defining the Runoff Curve Numbers (CN) in the urban catchment area. These CN values are then used to realistically quantify the direct runoff from rain events applying the SCS-CN method. The open-source software TELEMAC-2D has the SCS-CN method already implemented.

The task of this student work is to test and discuss the sensitivity of the overall simulation results with respect to the CN values in different urban catchment areas. For study projects, the scope of the task will be adapted, e.g. less CN values and catchment areas will be analyzed.

## Research Question

How sensitive are hydrodynamic rainfall runoff models in urban areas to CN values?

## Structure

- Literature research on hydrodynamic modelling in urban areas and the SCS-CN method
- Getting familiar TELEMAC-2D
- Run simulations with different CN values
- Compare and discuss results

## Supervisor

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