

Study Project/Master Thesis

Hydraulic Model Generation in a Study Area with Limited Data Availability

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, an extensive amount of data is needed to generate well-resolved hydraulic models. This leads to extra challenges in regions with limited data availability.

The task of this student thesis is to generate a hydraulic model for a study area in Indonesia. Different data sets of different quality are to be compared for the model generation. The generated model is to be analyzed regarding its sensitivity to different parameters using the modeling software TELEMAC-2D.

Research Question

What effects originate from limited data availability in flood modeling? How can we deal with the uncertainties in flood modeling regarding limited data?

Structure

- Assess available data with QGIS/ARCGIS and Matlab/Python
- Generate Hydraulic Model
- Getting familiar TELEMAC-2D
- Compare and discuss results

Supervisor

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