Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Versuchsanstalt für Wasserbau,
Hydrologie und Glaziologie

Projektarbeit HS 2013/14

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Propagation of Uncertainty in Dam Break Models

Most of the worldwide dams are of embankment type and were built decades ago. The risk assessment of a possible dam failure scenario is eminent for decision making institutions. Therefore there is a strong need for flood wave analysis tools where one of the most important parts is the dam break itself.

Numerous investigations, both experimental and numerical, have been made on the progressive failure mechanism of earthen dams. Existing dam break models strongly differ in their approaches and resulting outflow hydrograph. In addition the parameters to set are associated with all kind of uncertainties. Due to the missing possibility of calibration in the case of a dam break one has to deal with these uncertainties.

The goal of this "Projektarbeit" is to apply existing methods for uncertainty propagation in numerical models to dam break models. The investigation focuses on the impact of the uncertainties on the characteristics of the outflow hydrograph.

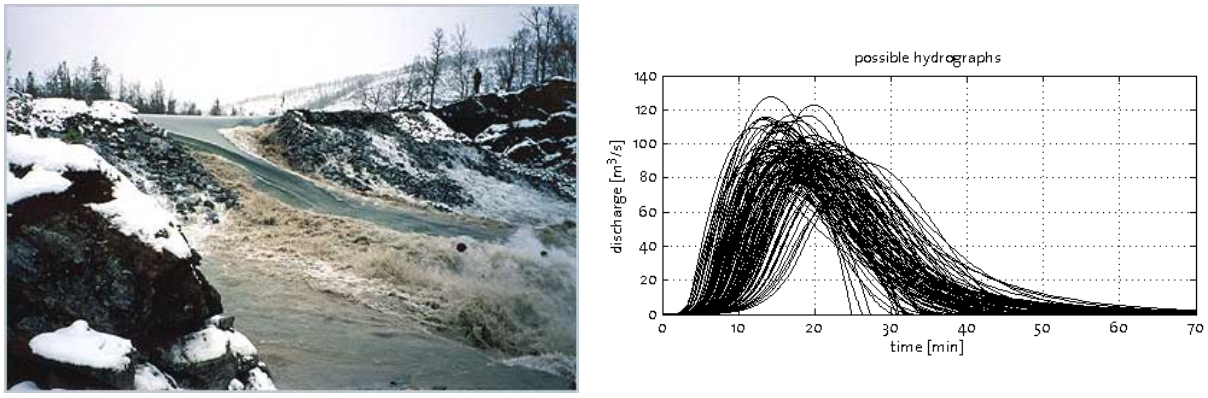

Abb. 1: Dam breach field test of a 6 m dam (left, source: IMPACT-project) and possible outflow hydrographs (right).

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Besonderes: Einzelarbeit oder 2er- bis maximal 3er-Gruppe
Einmal zu vergebende Arbeit