

Master Thesis FS 2015



Versuchsanstalt für Wasserbau, Hydrologie und Glaziologie

Leitung: Betreuung: Prof. Dr. Robert Boes Lukas Vonwiller

Hydraulic and morphological 2-d modelling of rivers

Flood protection and river revitalization projects have to consider hydraulic and morphological aspects. Research on these topics has a long tradition at VAW. Therefore, laboratory models and more recently numerical models are used.

This master thesis investigates the morphological development of gravel bed rivers with a numerical 2-d model using the software *BASEMENT*. The main question is whether all relevant processes, such as lateral erosion, are taken into account for such complex morphological simulations. In order to evaluate the numerical model, laboratory model results can be used (Fig. 1).

Interested students have the possibility to learn and develop numerical 2-d modelling skills, which will be more and more in demand in practice. There are no programming skills required. However, the lectures of Numerical Hydraulics and Numerical Modelling in Hydraulics and River Engineering are recommended.



Fig. 1: River morphology (a) at the Kander River (www.kanderwasser.ch) and (b) in a laboratory model at VAW

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Notes:	Single master thesis, research oriented, Thesis in German or English