



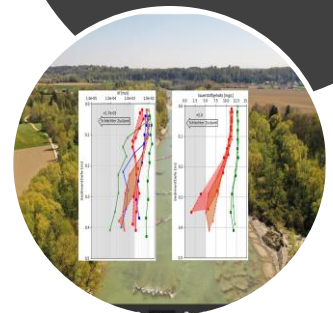
## M.Sc. Topic

“The effect of an artificial flood on a river bed – A multi-parameter analysis”

## Background

Riverbed sediments serve as habitat for several aquatic species. Hence, the quality of sediments has a direct influence on the quality of the habitat, and govern e.g., the success of fish reproduction. However, anthropogenic measures such as the construction of weirs and associated flow regulations result in a degradation of flow dynamics and may result in an interruption of sediment continuity. As a countermeasure artificial floods are produced, with the aim to initiate a certain kind of dynamics of the bed, breaking up armor layers and flushing out fine sediments from clogged river stretches. This thesis focuses on the Inn River, where detailed data from field campaigns collected before and after an artificial flood event are available. These unique datasets may serve in this thesis as a playground for data science techniques. You will perform an analysis of the data obtained by the multi-parameter approach to evaluate the effects of the artificial flood on the river morphology to finally contribute to a sustainable sediment management concept for the Inn River.

Multi-  
parameter  
analysis of an  
artificial flood



## Thesis Overview

1. Become familiar with the relevant measuring methods of this multi-parameter approach.
2. Apply available structured Python codes for data visualization and analysis.
3. Analysis of riverbed conditions before and after an artificial flood event using multiple parameters (e.g. oxygen concentration, hydraulic conductivity, grain size distribution).
4. Final evaluation of the effect of the artificial flood on the quality of the substratum.

## Desirable Skills

- Interest in river ecosystems and data analysis
- Knowledge of Python is an advantage



**Apply now!**

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Please send a few lines on why you would like to work on this topic.

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