



### B.Sc. / M.Sc. Topic

“Digital image analysis of stationary surfing waves”

### Background

In recent years, river surfing has become a welcoming alternative to overcrowded beaches resulting from the immense growth of surfing sports. For this purpose a wave forming apparatus, which maximizes wave height and inclination, was built at the *IWS Hydraulic Laboratory*. It consists of a height-adjustable ramp which causes an upstream impoundment and accelerates the flow over a deflector. The data acquisition equipment comprises a newly-developed digital image analysis (DIA), providing a full contour line of the wave, and a water level gauge to capture the wave dimensions. Both the wave forming apparatus and the DIA system show an acceptable performance, however, further improvement is needed.

## Stationary Surfing Waves



### Thesis Overview

1. Literature review of stationary surfing waves and DIA
2. Modification of the wave forming apparatus and improvement of the existing DIA system
3. Experimental series: Wave quality assessment of different geometrical and hydraulic conditions
4. Analysis and interpretation

### Desirable Skills

- Interest in hydrodynamics and experimental science
- Knowledge of MATLAB or Python is an asset but not mandatory



### Apply now!

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Please send your CV and a few lines why you would like to take this topic.

The thesis can be written in German or English.

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