

RESEARCH CLINIC

General information

Supervisor:	Peter Houben
Title of clinic:	Mapping of natural hazards (landsliding, flooding, and debris flows) in a low-mountain watershed (Rhenish Slate Mountains)
Number of students:	One or two (as a pair).
Major (<i>if applicable and approved by the Major Convener</i>):	EES
(Pre)requisites (<i>if applicable</i>):	Contents of the Earth System Science course. Commitment to work in a pretty natural environment. Basic GIS skills (ArcGIS) are required to present the results. Time to conduct field work (5 days) in the study area (spring break). As a student: You are a self-motivated, single-handed student with an ambition to learn much more about the topic domain, methods, and the study area.

Research context

This heavily field-work based research clinic using the methods applied during the Field Methods course to record landslide, debris flow and flood activity in a classic, steep, mountain watershed. For this, extensive field work is needed (1 week, during the spring break) featuring mapping of landsliding and flood sediment.

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Recently, central so far peaceful catchments --- its tributaries represent a typical Alpine headwater catchment, the one that are key for flood generation and related hazards events. The clinic mimics the basic steps for an assessment of hazard magnitude, frequency, and exposure.

The research clinic requires the student to work with rainfall and flood records, evaluate the data (magnitude and frequency analysis), apply the findings to the Breitach catchment utilising ArcGIS, and reflect on spatial implications with respect to flood generation and impact areas.

If you are a 2nd year student, you may use the methodology and results to develop the topic towards a research BSc thesis.

Please specify the tasks and activities, timeline, the learning aims and how they are assessed, i.e. what the deliverables will be.

- (A) Short review paper: Approaches to determine design events used on geosciences and civil engineering; characterization of the study area (2000 words; 4 weeks, ASMT: 25%)
- (B) Data implementation and evaluation (stats and GIS), work protocols, maps, report; ASMT: 50%
- (C) Mid of block4 - end: Evaluation and reflection report (ASMT, 25%)

Note: A student taking the Field Methods course heading out to the same area and using the produced information would particularly benefit with respect to gaining insight in the subject matter.

This is heavily field-work based research clinic using the methods applied during the Field Methods