



Analysing sediment storage and landform connectivity using geomorphological mapping and a systems approach (Gradental, Austria)

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Sediment cascades describe macro and mesoscale morphological systems in alpine catchments, however a number of temporal and spatial interactions between variable system components are still poorly understood. This study identifies sediment storage and routing patterns of sediment fluxes using geomorphological mapping and GIS-analyses complementary.

Multiple sediment storage- and flux-related landform parameters were mapped during several field campaigns in summer 2009. These include landform types, surface material, particle size, process activity, vegetation cover, input-output relationships, and others. Inaccessible areas (e.g. hanging valleys) were mapped by digital orthophoto-interpretation. Additional morphometric parameters are derived using DEM data. Landform parameters are analyzed using a systems approach to identify sediment stores, cascade structures and landform connectivity that compose the sediment flux system of the Gradental.

The study delivers a detailed geomorphological map of the Gradental, and a conceptual model of sediment flux. We will present preliminary results of the mapping campaign and the design and composition of the landform database that forms the basis for storage quantification and sediment budget calculation.