3 PhD positions in Alpine Sediment Research at ETH Zurich and University of Bern

**PhD 1: Sediment sources and connectivity analysis (ETH Zurich)**
The topics are mapping potential sediment sources, researching structural and functional connectivity metrics, exploring relations between sediment concentrations and basin and climatic inputs by deep learning data-driven methods. GIS, large data analysis skills, and basic knowledge in geomorphology are required. Supervision: P. Molnar (ETH) and F. Schlunegger (UniBe).

**PhD 2: Process-based hydrology-sediment modelling (ETH Zurich)**
The topics are research with our coupled hydrology-sediment model, making fine sediment load observations in small basins for model testing, adding new model components, and simulating source to sink pathways by tracing the sources with sediment fingerprints. Environmental engineering background, numerical methods knowledge, and excellent coding skills are required. Supervision: P. Molnar (ETH).

**PhD 3: Geological sediment tracing (Uni Bern)**
The topics are collecting field data for the characterization of source signals for bedload (grain size, bulk petrography) and suspension loads (cosmogenic nuclides, bulk geochemistry, mineralogy), to develop sediment budgets, and to trace source signals through the channel network. Geological field experience, GIS, basic modelling and knowledge about rock types and geomorphology are required. Supervision: F. Schlunegger (UniBe).

Where? Alpine Rhine
When? planned project start is 1 April 2023
How long? 4 year funding at SNSF level

How do I apply?
- for PhD1 and PhD2 online on ETH Jobs, more information from Prof. Molnar
- for PhD3 send application materials to Prof. Schlunegger

Deadline: 23.12.2022