



## **Hydrological patterns and processes of a deep seated creeping slope at Ebnet, Vorarlberg**

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The clay-rich Heumös slope in the Vorarlberg Alps belongs to deeply seated creeping mass movements (Lindenmaier et al., Hydrological Processes, 2005). It is observed since 1998 with a hydrological focus. Besides site-specific geological and geotechnical information about the slope we could gather climate, soil moisture and hydrologic time series with high temporal resolution, good enough to apply highly distributed physically based hydrological models. Additionally we use vegetation distribution to define and understand hydrotopes which influence processes on the slope and the unsaturated zone to enhance our multidisciplinary approach. The goal of the hydrological research is to find dominating processes and structures on different spatial and temporal scales which might influence slope movement. Movement at deeply seated shear zones is often linked to slow and long lasting groundwater changes. In contrast to this general statement, piezometers in 5 and 12 m depth on the Heumös slope exhibit quite fast reactions on precipitation events with a distinct temporal pattern which can also be seen in other hydrological signals. This fast reaction stems from hydrological active areas which initiate a pressure signal that propagates to the hydrological inert slope body. Though a direct link between fast groundwater pressure signals and movement rates could not be verified yet, the indications show that movement is event driven and not of a continuous type.