



Process dynamics in the recently deglaciated area surrounding the Findelengletscher (Valais, Switzerland)

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Enlarging alpine glacier forefields and "sidefields" are not only important indicators for the vanishing ice, but also often highly dynamic regarding sediment transfer by different processes. Typically glacio-fluvial, gravitational, and periglacial processes occur in close vicinity and on different temporal scales (continuous, sporadic).

We investigate the area surrounding the Findelengletscher by a unique dataset of digital elevation models (DEMs) with high-resolution (1m) from multi-temporal LiDAR (Light detection and ranging) campaigns (2005, 2009, 2010) and an additional survey in 2014 using a fixed-wing UAV (unmanned aerial vehicle) deriving a DEM using structure from motion (SfM). Based on these data, landforms as well as the corresponding forming processes are mapped. For the nine year time series, landform changes are described and analysed in a spatio-temporal context. In addition, sediment transfer is quantified for most of the process domains; uncertainties concerning the differentiation of dead-ice melt and glacio-fluvial erosion are addressed.