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## Long-term development of the sediment dynamics of proglacial streams in three alpine catchments

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Due to glacier melting since the end of the Little Ice Age, the system of proglacial streams has experienced significant changes. This motivates the question about long-term developments of sediment dynamics in these stream channels with ongoing glacier melting. Previous studies showed cycles of aggradation and degradation in proglacial streams. On the long term, some discovered an aggrading system and others a balanced ratio. However, no long-term data of channel sediment dynamics for several decades and multiple catchments that would enable a comparison have been discussed to date.

Within the project "Sensitivity of High Alpine Geosystems to climate change since c. 1850" (SEHAG), historical digital elevation models (DEMs) were generated from aerial images dating back until 1953. Moreover, from the 2000s on, airborne LiDAR datasets and DEMs based on drone images are available. Numerous DEMs of difference were generated for the three alpine catchments studied by the SEHAG project: Kaunertal and Horlachtal (Tyrol, Austria), and Martelltal (South Tyrol, Italy). These catchments differ regarding their location respective to the alpine main divide and also regarding their percentage of glaciation. This database enables the comparative investigation of sediment dynamics within the main channel system over decades.

Our preliminary results show mainly accumulation next to the glacier tongue, but subsequently a reworking of this accumulated material by channel incision until the channel system reaches a state of stability some years or decades after deglaciation.