



Investigations on climate-induced paraglacial changes in a glacier retreat area with special consideration of proglacial lakes: a case study from the Dachstein group

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Since the end of the Little Ice Age global warming results in a still ongoing retreat of glaciers in the Alps. After their retreat, glaciers leave behind large amounts of easily erodible sediments and a highly vulnerable paraglacial landscape system characterized by morainic material and continuously sedimenting lakes. In addition, the debuttressing of rockwalls and the decay of permafrost in the high mountain regions facilitates mass movements of potential disastrous consequences, such as rock falls and debris flows. Therefore, it is highly important to investigate how glacial retreat influences sediment dynamics in proglacial areas. In the presented work glacier retreat and associated sediment dynamics were investigated for the Hallstätter Glacier in the Dachstein group (Upper-Austria) by analyzing remote sensing data, focusing on proglacial lakes. Glacial retreat from the period of 1950 to 2012 was documented by interpreting aerial photographs, further mapping and quantifying geomorphic change in the glacial retreat area from 1950 to 2015 via field observations and GIS analyses. First results will be presented at the EGU General Assembly 2018.