ÖAW AUSTRIAN ACADEMY OF SCIENCES

IGF – INSTITUTE FOR INTERDISCIPLINARY MOUNTAIN RESEARCH

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Changing debris cover on Eastern Alpine glaciers: Quantification and hydrological impacts

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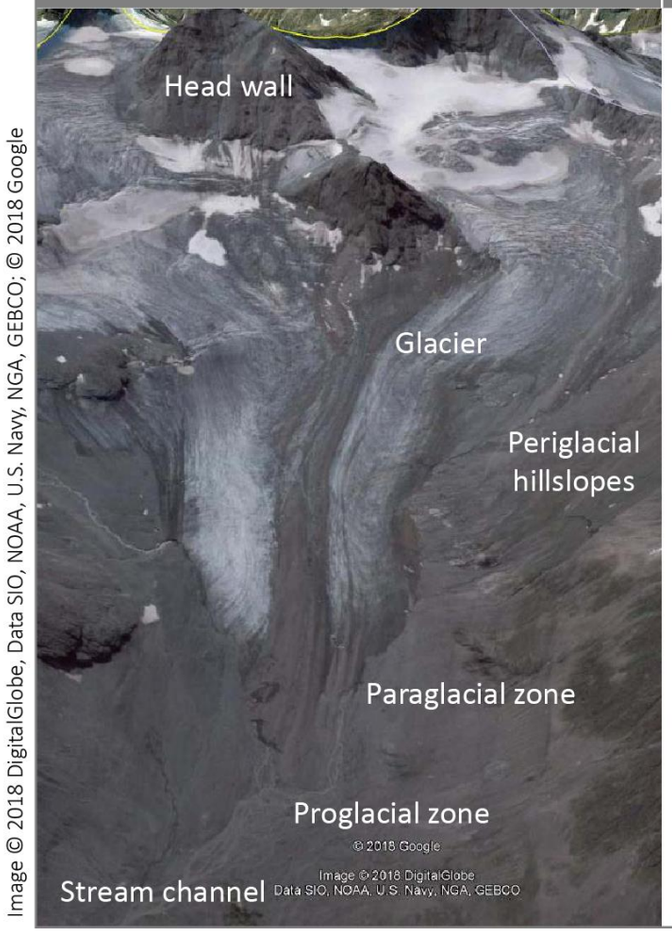
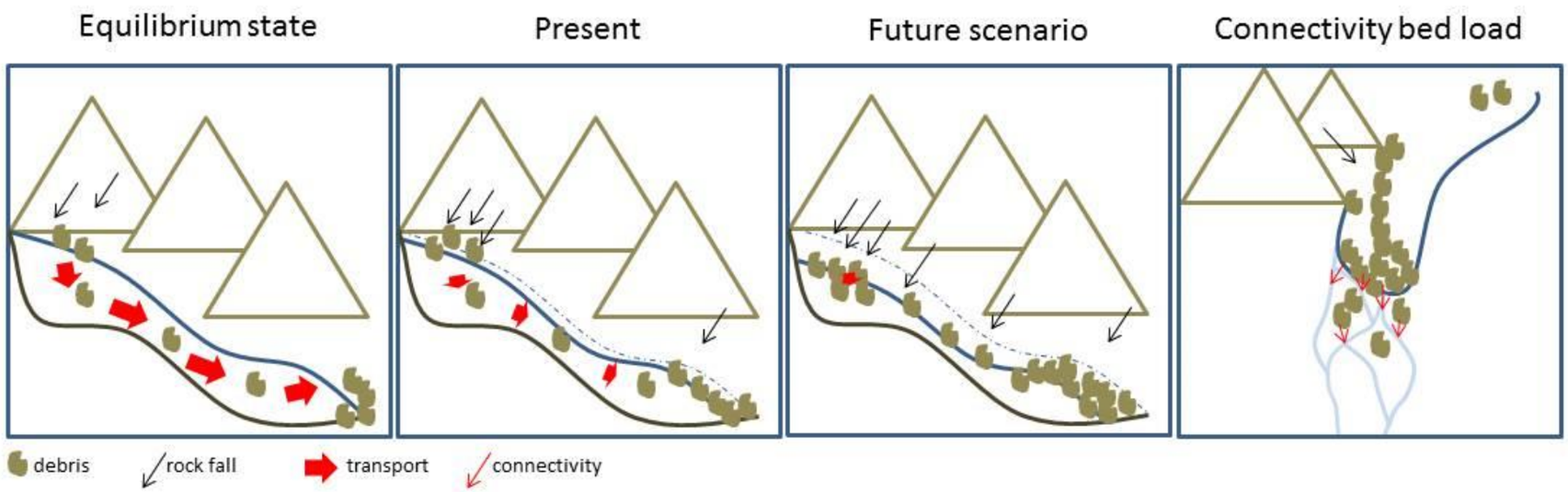


System	Process	Driver	Impact
	Rock fall	Climate, permafrost degradation, glacier retreat and debuttressing, lithology	Debris release and deposition on glacier surfaces
	Mass balance	Climate, surface conditions (e.g. debris cover)	Glacier surface elevation, glacier area, runoff
	Ice flow	Glacier mass, subsurface hydrology	Debris transport and deposition in proglacial zone
	Fluvial transport	Runoff, transport capacity, grain size distribution, connectivity	Export of proglacial debris and sediments



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RESEARCH QUESTIONS

1. How is the supraglacial debris connected to fluvial transport?
2. How do renewed movements of sediment and the channel network evolve in the proglacial area of partly debris-covered glaciers over time?

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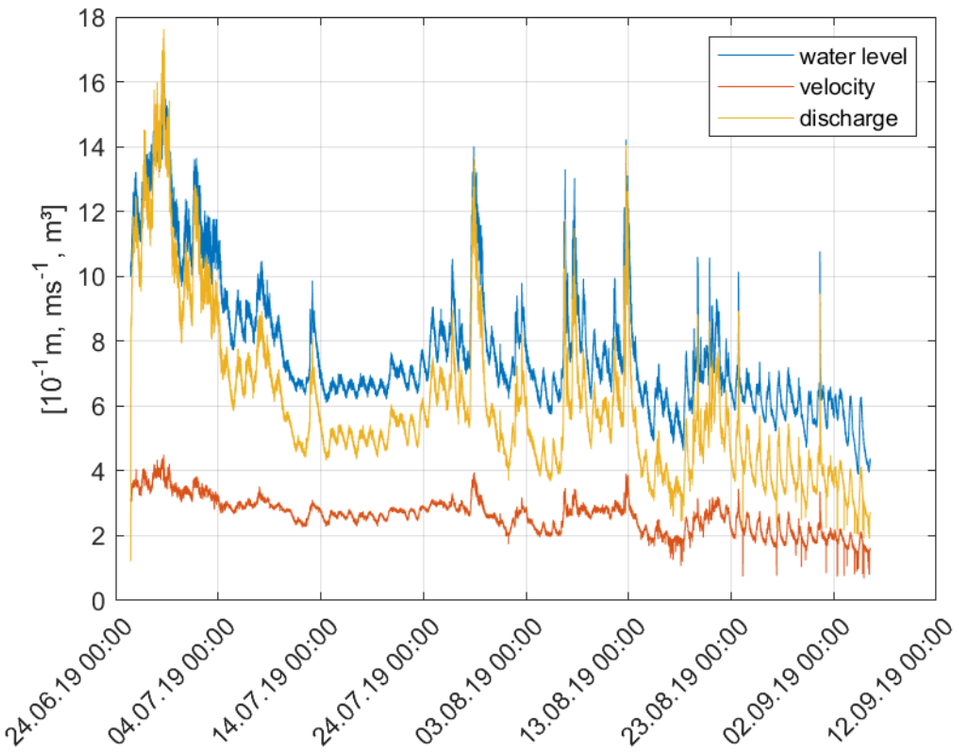
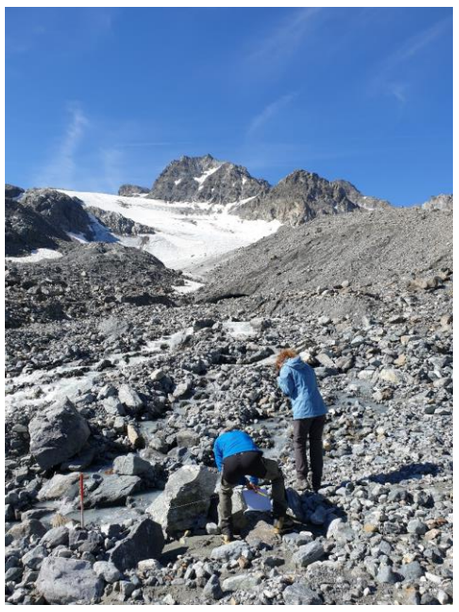
Installation of runoff gauge

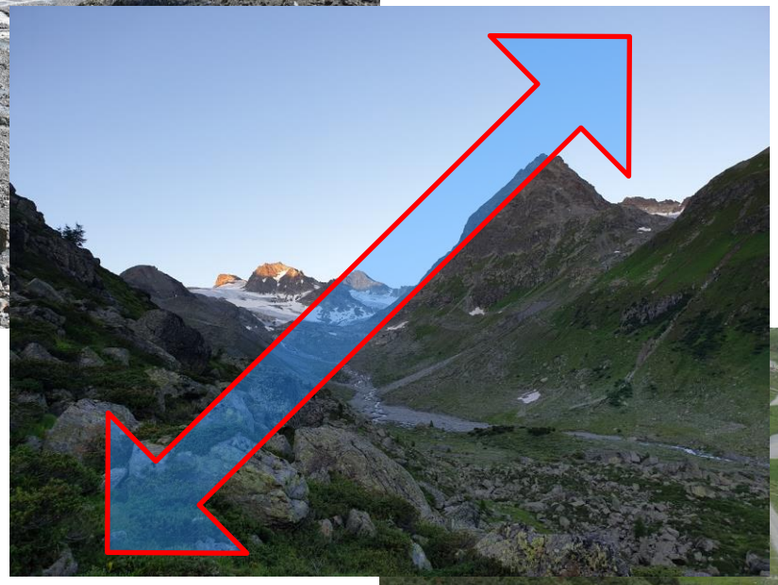


Surface change detection



Sediment and bed load transport

Debris starts to be transported must be routed



Debris input must have started somewhere