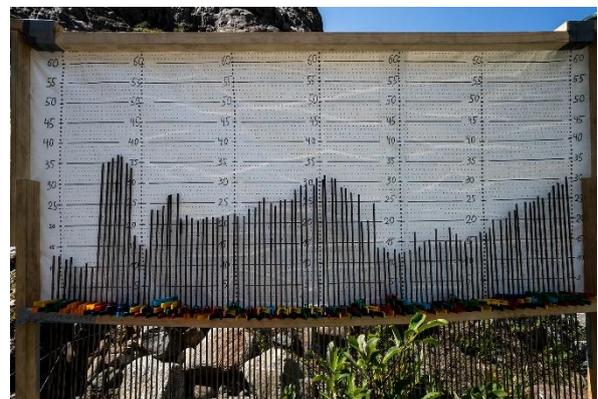
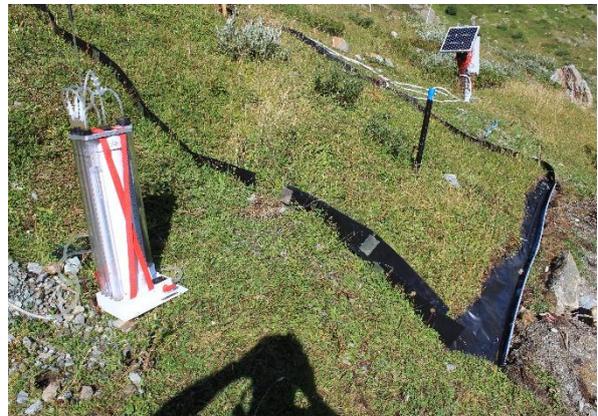


MSc thesis in hydrology, starting summer 2019

How do hillslope surface hydrological characteristics in a proglacial area change during landscape development and how does this affect surface runoff?

As soils on moraines develop and vegetation cover increases, the hydrological characteristics change as well. However, so far little is known about how the hydrological characteristics of moraines change over time. Therefore, we investigate a chronosequence of moraines, ranging from 20.000 years to 120 years in age in the glacier forefield of the Griessgletscher in the Swiss Alps. We will measure the surface hydraulic characteristics (surface infiltration, saturated hydraulic conductivity, resistance, hydrophobicity, microtopography, etc.) on every moraine and compare it with biological, pedological and topographical characteristics of the individual slopes to identify the main factors that affect surface flow patterns and the ratio between surface and subsurface flow during landscape development. The surface measurements will be compared with data from artificial rainfall experiments (surface and subsurface flow, sediment load), to estimate the impact of surface characteristics on hydrological surface connectivity and soil erosion.



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