



Geomorphological evolution and sediment yield from scree slopes with projection in the glacier watersheds of Tuni and Condoriri, Bolivia

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ABSTRACT

This paper describes the sediment yield production from the most active areas in the glacier watershed of Tuni/Condoriri in Bolivia, represented by mobile fans, and based on the short monitored program carried out during rainy season in 2012-2013. The sediment yields in the slopes and temporal analysis of scree slope forms, considering almost 50 years of lapsed, explains geomorphological evolution and changes; therefore the perception should be valid for the rest of catchments over the Cordillera Real in Bolivia. There was found that sediment production from scree slopes at yearly scale is very similar to suspended sediment in one of the mean streams. The first type mostly is retained by the glacier catchments, which means for bed load very rare contribution, but the suspended sediment is evacuated from the catchments; thus this is the only source contributing on the glacier lakes sedimentation. The geomorphological changes will depend on the faster scree slope evolution, also on the extension of the vegetation cover which is increasing on the same time that the glaciers are decreasing due to climate changes. Up to now the only driving factor explaining the sediment production is related to slopes. Regarding to effective precipitation, the results found is very ambiguous by now.

Keywords: Geomorphological evolution; scree slope; sediment yield; trend of scree slope; driven factors.