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# Denudation rates of tropical mountain regions : What is the proportion of chemical weathering vs. mechanical denudation in a tectonically active settings?

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Denudation rates of tropical mountain regions in tectonically active settings, such as the northern Andes, are known to be high. Rivers draining the northern Andes are important sources of sediment and nutrients to the low-lying basins and oceans. The largest part of the total denudation rates in these environments is often considered to be mechanical denudation, given their steep topography, young geology and humid and warm climate.

In this study, we try to better understand the linkage between physical denudation and chemical weathering for degraded catchments with shallow, eroded soils. We selected a limited number of case-studies from the Ecuadorian Andes being characterized by humid climate, steep topography, and intensive land use. For these catchments, the total denudation rates are derived from cosmogenic isotope concentrations in riverborne quartz (Vanacker et al, 2007, Geology). The B-WITCH model (Roelandt et al. submitted, GBC) is used to quantify chemical weathering rates.

The results of this study will allow us to get a better insight in the linkage between chemical and physical denudation rates for an active tectonic setting. Besides, the data will give the opportunity to explore the effect of land use change on chemical weathering rates.