Abstract. We consider measurements of both in situ produced cosmogenic nuclides and dissolved load flux to characterize the processes and pace of landscape change in central Cuba. Long-term sediment generation rates inferred from ^{26}Al and ^{10}Be concentrations in quartz extracted from central Cuban river sand range from 3.7-182 tons km^{-2} yr^{-1} (mean = 62, median = 57). Rock dissolution rates, inferred from stream solute loads, exceed measured cosmogenic-based sediment generation rates in 15 of 22 basins, indicating significant landscape-scale mass loss not reflected in the cosmogenic nuclide measurements. $^{26}Al/^{10}Be$ ratios are consistent with the presence of a deep mixed layer in the five basins that have the greatest disagreement between rock dissolution rates (high) and cosmogenically-derived sediment generation rates (low). Failure to account for mass loss by solution when interpreting cosmogenic data would lead to underestimates of total landscape denudation in the humid, tropical landscape of central Cuba. Our data show that accounting for the contribution of mineral dissolution at depth to calculations of total denudation is particularly important in the humid tropics, where dissolved load fluxes are high, and mineral dissolution can occur many meters below the surface, beyond the penetration depth of most cosmic rays and thus the production of cosmogenic nuclides.

Background – MISSING!

Problem

Methods – MISSING!

Results

Implications.