

Variations of a low latitude Andean glacier according to global and local climate variations: first results

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Abstract We have 10 years of mass balance, meteorology and precipitation data on glacier 15 of Antizana, located in Ecuador, very close to the equator. Starting with the results of Francou *et al.* (2004), we studied the relation of monthly ablation zone volume variations of the glacier with 20 variables chosen to represent the global and local climate. The statistical model provided explains 58% of the melt variance. This model implicates the Niño3+4 index, as well as precipitation anomalies at the foot of Antizana. Excess (lack) of precipitation during the nine previous months corresponds to a decrease (increase) of melting. A warm (cool) anomaly of the ENSO oscillation corresponds to an increase (decrease) of melting 4 months later.

Key words Andes; Ecuador; El Niño; glacier melting modelling; tropical glacier
