



Balance of glacial mass in Peruvian Andes Case: Artesonraju Glacier

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Global Climate Change is currently one of the most important effects that is happening around us and it is bringing terrible consequences to environment, without discriminate big cities from little ones, high mountains and forest with droughts, rains, floods, snows, etc. In the case of high mountains, the effects can be seen also in glaciers dynamics by its retreat. Retreat of glaciers is a secular phenomenon that has become dramatic since the 1980s, Considering that Peru has the best tropical glaciers (71 per cent) in South America and they have been confirmed to be the best indicators of Global Climate Change related to other places in which glaciers dynamics are affected too, a study of balance of the glacial mass in Peruvian Andes has been developed, specifically in Artesonraju Glacier, located in Cordillera Blanca - Ancash.

The present study consisted in the application of mass balance of the glacier as a result of adding the accumulation and ablation that occurs in it, which is the mass change (expressed as an equivalent volume of water) produced during a defined period of time (annual, monthly, seasonal). As a result, Equilibrium Line is established by giving the altimetry level where the balance reaches the value of 0 meters of equivalent water per year. This technique has been applied since 1972 in 13 tropic glaciers that are located in Cordillera Blanca.

Studies showed that the glaciers are good indicators of climate change, that is, with the variation of the climate they can react positively (La Niña) or negatively (El Niño); besides, in the last 12 years of glaciological mass balance of Artesonraju Glacier, Equilibrium Line has moved up to level 5038 meters over sea level and in the last 10 years its front has retreated 65.84 m.