



Evaluating different methods for glacier mass balance interpolation on a tropical glacier

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Glaciers in the inner tropics receive precipitation throughout the year while the annual temperature amplitude is small. Therefore, a seasonal distinction in accumulation and ablation season as for mid-latitude glaciers is hardly applicable. In order to better understand the sub-annual glacier development and its relation to meteorological conditions, a mass balance programme with monthly resolution was established on Conejeras Glacier in the Cordillera Central in Colombia in 2006.

After almost ten years of measurements the time series has been reanalysed. The results show a mass balance of around -25 m w.e. during this period and a strong correlation to several warm and cold phases of ENSO. Reanalysis of the monthly mass balance data reveal an often low correlation between ablation/accumulation and elevation. Quality and density of the measurement network allow for the application of several different interpolation methods, recommended ones as well as “outlawed” GIS methods like Kriging. In this study we show the advantages and disadvantages of a number of possibilities and try to rank their usability according to different conditions and purposes. The application of multiple methods can also be of advantage for the estimation of uncertainty ranges.