



Changes of glaciers outlines in the last 150 years in the Western Italian Alps

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Glaciers are widely recognized as the best terrestrial indicator of climate change: nevertheless, changes occurred since the end of the Little Ice Age (LIA) are often poorly understood. In Italy, glacier front variations in the last 100 years are quite well documented, thanks to the efforts of the Italian Glaciological Committee, which since 1927 coordinates annual surveys on hundreds of glaciers, to measure the position of glacier fronts. However, changes in time of front position, even being the easiest measure of glacier evolution to be carried out in the field, only partially describe changes occurred to the glacial masses. Moreover, the last national glacier inventory was promoted by CGI on occasion of the International Geophysical Year 1957-1958. In the framework of the Alcotra 2007-13 Project n. 56 GlaRiskAlp, we were able to update the outlines of the glaciers of the provinces of Turin and Cuneo (Western Italian Alps), and to reconstruct their limits in specific time steps (end of the Little Ice Age – from geomorphologic analysis, 30s - from IGM cartography, 50s - from the glacier inventory of CGI, 80s from the glacier inventory WGI). The values of some basic parameters (area, length, width, slope, max and min elevation, exposure) of the considered glaciers were assessed for the specified time steps. The present contribution is aimed to provide some statistical analysis of resulting data, taking into account the role played in glacier evolution by different factors, like latitude, surface, exposition, elevation, together with a description of the climatic context.