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New glacier inventory of Salzburg 2007/09

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Glacier inventories are an important data basis for several investigations such as length-, area- and volume changes in the course of climate change. The new glacier inventory of Salzburg is part of the third Austrian glacier inventory (GI3) and is valid for the years 2007 and 2009 depending on each mountain range. The first inventory (GI1) was compiled in 1969 and the second one (GI2) represents the glacier state from 1998 to 2002.
In Salzburg, 150 glaciers are located in the six mountain ranges: Ankogel, Glockner, Granatspitz, Sonnblick (Goldberg), Hochkönig and Venediger. The basis for the new mapping were orthophotos of 2007 and 2009 and the DEM of the southern part of Salzburg. On the basis of former inventories area-, height- and volume changes have been calculated. The biggest loss of glacier area per mountain range was found in the Ankogel range and on Hochkönig because of the disrupted structure of the thin glaciers. Referring to the absolute values, the largest changes took place in the Glockner- and Venediger mountain range with -10.11 km^2 and -9.72 km^2 during the period between GI1 (1969) and GI3 (2007/2009) respectively. Due to the lack of DEMs (only the southern part was available) volume changes have been calculated for about half of all glaciers in Salzburg. These are located at the Glockner, Granatspitz and Sonnblick mountain range and showed -0.335 km^3 on average changes in height of 9.3 m. An extrapolation of these changes to all of the 150 glaciers in Salzburg results in a loss of about 0.7 km^3 between GI1 and GI3.