



Downscaled GCM projections of winter and summer mass balance for Central European glaciers (2000-2100) from ensemble simulations with ECHAM5- MPIOM

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In this study projections of glacier mass balance are generated from ensembles of General Circulation Model (GCM) simulations by the use of direct statistical downscaling. Thereby the general features of the atmospheric circulation over an expanded geographical region covering the European Alps are linked empirically to winter and summer mass balance records measured at several glaciers in Austria.

The projections are taken from an ensemble of ECHAM5-MPIOM simulations forced with the IPCC-SRES scenarios A1B and B1. The first scenario assumes global economic growth and well-balanced use of fossil and non-fossil energy sources. The latter scenario describes an ecologically friendly development of society that involves the preference of ecological welfare over individualism. Results based on the statistical downscaling indicate decreasing balances for both, winter and summer. These results suggest continued frontal recession and downwasting of alpine glaciers in this region until 2100.