



## Swiss Climate Change Scenarios: The CH2011 Initiative

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With the growing demand to accurately assess future climate change, new challenges arise for climate services. Among the most difficult issues is the need to understand, quantify and communicate uncertainties associated with climate projections. The CH2011 initiative, that recently released the new Swiss Climate Change Scenarios, provides an excellent example of the inherent complexity. The aim of the CH2011 initiative was to join expertise and knowledge of several Swiss climate research institutions and governmental offices to establish a robust assessment of how climate in Switzerland may change within the 21st century. Along the resulting CH2011 report, digital scenario data are provided for three different emission scenarios at different resolutions: (a) probabilistic seasonal mean changes for three distinct regions, (b) regional scenarios at daily resolution based on probabilistic method and (c) changes in daily mean values at individual meteorological station sites within Switzerland. User needs have been considered continuously from the start of the initiative.

The new CH2011 scenarios are based on the high-resolution regional climate models from the EU FP6 ENSEMBLES project and were constructed using novel statistical methods to assess the associated uncertainties. The projections show that by the end of this century Swiss climate will depart significantly from present and past conditions. Even if effective mitigation measures were implemented to halve global greenhouse gas emissions by 2050, climate would still change in Switzerland over the next decades. Mean temperature will increase in all regions and seasons. Summer mean precipitation is expected to decrease by the end of this century all over Switzerland, while winter precipitation is likely to increase in Switzerland South of the Alps. In other regions and seasons models indicate that mean precipitation could either increase or decrease.

Along with these changes in temperature and precipitation means, also the nature of extreme events is expected to change. The assessment indicates more frequent, intense and longer-lasting summer warm spells and heat waves, while the number of cold winter nights and days is expected to decrease. Projections of the frequency and intensity of precipitation events are more uncertain, but a shift from solid (snow) to liquid (rain) precipitation is expected.

The report and data are provided through a specific joint web portal to potential users. Feedback and special requests are handled in a coordinated manner to optimally support the users and further improve the services.