CC-Snow: an interdisciplinary project to investigate climate change effects on future snow conditions and winter tourism in Tyrol and Styria (Austria)

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The interdisciplinary, ACRP (Austrian Climate Research Program) funded project CC-Snow aims at utilizing improved future climate scenario simulations to determine the effect of climate change on natural and artificial snow conditions and their effects on tourism and economy in the provinces Tyrol and Styria (Austrian Alps). A sophisticated interface is developed to provide adequate climate model output for two snow models at different scales. The deterministic snow model AMUNDSEN is applied at the local scale for the test sites Kitzbuehel and Schladming. The resulting high resolution snow cover pattern time series are used to train the regional scale, conceptual snow model SnowReg to be applied for Tyrol and Styria. Both snow models provide simulation results for snow reliabilty in the respective scales and regions, and are applied for historical as well as future scenario temporal horizons. Inferred from the climate scenarios, indicators are derived to describe snow reliability conditions and potential of future artificial snow production. By means of a socio-economic analysis, effects on tourism and economic structure are investigated. Integration of stakeholders will be fostered in terms of an active participation process. The presentation focuses on the outcomes of the first project phase, i.e. the modelling of climate, snow cover and the set of indicators at the two scales. An outlook is given on the socio-economic analyses of the second project phase.