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Impact of land-atmosphere coupling for projected changes in precipitation in Central Europe

S.I. Seneviratne (1), P. Della-Marta (2), and D. Lüthi (1)

(1) Institute for Atmospheric and Climate Science, ETH Zurich, Switzerland; (2) MeteoSwiss, Zurich, Switzerland

Climate-change scenarios for Central Europe project that enhanced greenhouse gas concentrations will lead in summer both to a mean decrease of precipitation and an increase of extreme precipitation events. We investigate here the role of future soil moisture changes for these projections using numerical experiments with a regional climate model. We look both at changes in mean precipitation and changes in precipitation distribution. Our results show that the mean decrease in summer precipitation and the changes in precipitation extremes are significantly impacted by soil moisture modifications under the warmer climate conditions.