



Land use sensitivity of convection triggering potential in Europe in climate simulations with WRF

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Commonly regional climate simulations don't include land use change, though grassland, cropland and forests, which cover large parts in Europe have different characteristics. Consequently land use changes can alternate the energy and water fluxes between the land surface and the atmosphere and therefore may significantly impact the atmospheric boundary layer and resulting clouds and precipitation. Within the WCRP Coordinated Regional Climate Downscaling Experiment (CORDEX, <http://cordex.org>) the Flagship Pilot Study Land Use & Climate Across Scales (FPS LUCAS) was launched to address land use change in regional climate simulations in Europe. The first phase experiments started in 2017 to study the sensitivity of the regional climate models on land use. We present the results of an analysis of our simulations at 0.44° resolution with the Weather Research and Forecast Model WRF with its land surface model NOAHMP for the two FPS LUCAS cases grassland and forest only and the control simulation with the CORINE based land use from 2006. The simulations from 1986-2015 are forced with the ERA-Interim re-analyses data. The analysis shows the terrestrially and atmospherically controlled convection triggering potential in summer for the cases.