

Soil in the regional climate model system CCLM – studies in the Main catchment area

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An improved description of the water and heat fluxes in soil within the regional climate model COSMO-CLM was achieved in the context of this project. This included the generation and implementation of high-quality soil type informations based on up-to-date soil data sets (the Soil Map of the Federal Republic of Germany BÜK 1000 N and the Harmonized World Soil Database HWSD). Additionally, the model physics had to be successfully adjusted to the new requirements.

Sensitivity studies showed a strong influence of soil description and soil physics on simulated water contents and, to a lesser extent, on simulated soil temperatures. Additionally, considerable influences of the enhanced soil description on several simulated quantities like simulated latent and sensible heat fluxes were shown for the Main catchment area. In future, a more efficient use of the primary soil information could lead to further improved regional climate simulations with the climate model COSMO-CLM.