



Benefits of convection-permitting simulations in the non-hydrostatic regional climate model REMO-nh

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Owing to the ever growing demand for local climate change data in climate service applications the regional climate model REMO has recently been extended to the non-hydrostatic scale. The implementation is based on ideas developed by Miller and Pearce (1974) and Janjic (2001). At scales of 3km horizontal resolution and below we expect the model to be able to resolve convection at least partly. To gauge the ability of the model to represent deep convection at high-resolution without the use of physical parameterization we conduct a process study in an atmospheric condition characterized by strong convection. As a reference we perform a simulation with active parameterization scheme of Tiedtke-type. To investigate relative benefits of convection-permitting simulations within REMO-nh we additionally compare the precipitation with results of the hydrostatic model REMO at 10km horizontal resolution.