



High resolution downscaling of climate simulation using WRF-CIM

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In light of the last report from the IPCC, due to global warming, urban heatwaves are going to become more frequent in the future. However, most available climate scenarios do not provide high resolution data to design strategies at local scale for adaptation and mitigation in urban settings. One possibility to overcome this shortcoming is to dynamically downscale conventional climate scenarios to local scales that are relevant for urban planning strategies. We here present an application which is using CORDEX-style regional climate simulations performed at a resolution of 3km to drive very-high resolution simulations (1 km) for individual cities. Simulations are first run for a historical period to evaluate the performance of the model and are run for the cities of Basel and Lausanne using the Weather Research and Forecast (WRF) mesoscale model coupled with the Canopy Interface Model (CIM). The results from the simulations are compared with meteorological stations located in the domain. We demonstrate that the use of the WRF-CIM system provides high resolution data at a local scale which compares very well with the monitored data and can hence be used to dynamically downscale future climate datasets.