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Megacities Impact on Air-Quality and Climate Interaction: Contribution of Urban Parameterization

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In regional scale, the megacities can affect significantly climate not only due to urban heat island but through the interaction of atmospheric chemistry and aerosols with atmospheric processes, especially radiative transfer and cloudness. These effects were extensively studied within the EC FP7 project MEGAPOLI, where we contributed with simulation using RegCM-CAMx couple for the region covering most European megacities, i.e. industrial and urbanized areas.

In present study we have introduced urban parameterization into the previous simulations. The surface scheme in regional climate model RegCM has been extended with Single Layer Urban Canopy Model (SLUCM), which is used in dynamic scale within BATS scheme. The effect of this parameterization is shown and discussed, sensitivity to some settings is presented.