



## **High resolution model simulation of Urban Heat Island for a medium sized Hungarian city**

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High resolution, nested simulations with the Weather Research and Forecasting model have been performed for a medium sized Hungarian city (Szeged) in order to analyze the Urban Heat Island (UHI) effect for 25 sunny days in June, July and August, 2015. Several runs were made with different model setups and input geographical databases to fine tune the model performance for optimal agreement with measured UHI parameters. Practical and theoretical aspects of the model setup and running, as well as first experiences from the model results have been discussed and the necessary adjustments for future investigations have been concluded. With the application of a high resolution model grid, detailed and specific surface and soil database, and categorized urban input data, the model estimates for UHI effects is realistic for clear sky and few cloud amount cases. Since the model performs less effectively in case of scattered to broken amount of low and middle level cloud layer, the appropriate settings of Radiation, Microphysics and Planetary Boundary Layer parameterizations have to be reconsidered for more reliable UHI simulations.