



Validation of the model PALM-4U against observation campaign in Prague-Dejvice

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The newly developed urban climate model PALM-4U (www.palm4u.org) allows to perform high-resolution simulations of meteorological conditions in urban areas, mainly with respect to phenomena of urban heat island and air quality in street canyons. The new significantly enhanced version 6.0 of the model has been released in October 2018 and our team has strongly contributed to its development. The PALM-4U model can be used for testing the efficiency of micro or local scale climate adaptation strategies (green and blue city etc.). Local municipalities as well as some departments of the Czech Government are interested in results of this modelling.

This presentation shows results from detailed validation of the model against the purposeful observation campaign done in Praha-Dejvice area. The campaign was accomplished within the project UrbiPragensi and took two fourteen-day episodes; one in typical summer conditions and the other in winter of 2018 year. The campaign was carried out by Czech Hydrometeorological Institute (CHMI) specialists in collaboration with modelling team. It utilized four fully equipped vehicles, infrared cameras, drone for vertical profile measurement, and instruments for measurement of heat fluxes through building envelopes. A wide range of meteorological and air quality measurement data has been collected. Apart from this campaign measurements, a meteorological data from CHMI's professional background stations in Prague, including vertical profiles measurement and mixing height, are available. This allows to compare a wide range of the modelled and observed values of meteorological characteristics. Being long-term PALM/PALM-4U developers and users, we tightly collaborate on this work also with our partners in the Germany project MOSAIK.