

Interactive comment on “Impact of urban canopy meteorological forcing on aerosol concentrations” by Peter Huszar et al.

Anonymous Referee #2

Received and published: 16 July 2018

General comments: This is an interesting paper investigating the role of urban canopy meteorological forcing on both aerosol as well as aerosol compounds' concentrations being a novelty of that study. The simulations have been performed for Europe for summer conditions over the period of 2001-2005 by the use of regional climate model RegCM4 coupled to the chemical transport model CAMx. The paper is well-written, clearly presents results and conclusions. It has considerable scientific significance. I have following comments before the paper is accepted to be published in ACP.

Specific comment: The CLM4.5 surface model included in the calculations is based on "the canyon representation of urban areas, described by building height and street width". These are quite detailed input data and also their impact is important in the lower scale than 10 km x 10 km used in the model simulations, I suppose also that

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the availability of such data is rather limited. Please give the source of the data as well as discuss their representativeness in the 10 km resolution. The same questions (source of data, representativeness) arise from the way how "anthropogenic heat from air conditioning and heating" is calculated on-line in CLM4.5.

Technical comments: p. 2, l. 14: "regional" instead of "regionals";

p. 3, l. 16: "how" instead of "the how";

p. 4, l. 27: should be (Dickinson et al., 1993);

p. 5, l. 32-33: please give the references in parentheses;

p. 6, l. 7: should be (CH₄);

p.7, l. 26: should be "Therefore". In this sentence please remove "respectively";

p. 7, l. 29: should be "In Fig. 1";

p. 7, l. 31: should be "for both cities";

p. 8, l. 6: please use "7-8 pm" instead of "19-20 pm". Please correct throughout the MS;

p. 8, l. 26: should be "all aerosol types";

p. 8, l. 27: please remove "as well";

p. 8, l. 29: should be "for each component";

p. 9, l. 5: should be "Po Valley in Northern Italy or in Southern Poland";

p. 9, l. 7: should be "Northern Italy". Please correct throughout the MS;

p. 9, l. 10: "is increasing" instead of "increased";

p. 9, l. 13: "of wide" instead of "wide";

p. 10, l. 17: please add "respectively" in the end of the sentence;

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p. 10, l. 21: "Fig. 7";

p. 10, l. 21-23: please clarify the sentence starting with "In the chosen...";

p. 12, l. 34-35: should be "...has also this large positive maximum, reaching...";

p. 14, l. 33: "In areas..." instead of "Areas...".

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-415>, 2018.

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