

Interactive comment on “On the parameterisation of the urban atmospheric sublayer in meteorological models” by A. Baklanov et al.

Anonymous Referee #2

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My overall conclusion is that a new paper must be written which is much shorter and much more focused, but preferably including a deeper evaluation of the parameterizations. The paper could clearly be based on parts of the material in this paper. Further below I have given some suggestions on how to carry this out.

The submitted paper deals with many important and interesting issues in Urban Air Quality research and management. National meteorological institutes have huge amount of detailed numerical output from weather prediction models with a potential for use in Urban Air Quality forecasting and in the field of improving the understanding and parameterization of the physical processes taking place in the urban boundary layer. Substantial progress has been made in UBL parameterization and urban characteriza-

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tion lately. But there are large challenges in getting the different scientific communities working together on detailed urban monitoring, modeling and forecasting.

A major difficulty of this paper is that it includes too many aspects of the UBL work, it presents several parameterizations without connecting them, once a data analysis (parameterization comparison with measurements) is presented it is rather superficial (the exception is the section 5.2., the Marseille experiment, where a more thorough and interesting model vs. measurement analysis is carried out, but unfortunately no link to NWP models is given which was expected to be a main focus of the paper after reading the introduction). In addition “the paper” has more the style of a scientific progress report/text book than a scientific paper. Note also that the title of the paper does not reflect the content properly. Both in the introduction and the conclusions it is clearly said that the paper presents progress of an EU project named FUMAPEX, which is quite different to the more ambitious title “On the parameterization of the urban atmospheric sublayer in meteorological models”.

There is however an impressive amount of knowledge presented from the field of UBL parameterization and modeling, and with a more appropriate structuring of the theoretical discussion, the model/parameterization and measurement analysis several interesting more focused papers could be suggested based on this material:

- Literature review and/or theoretical and parameter discussion of the parameterization of physical processes in the UBL (most of the material until page 9, but some after this page as well).
- Presentation and evaluation of the DMI module (with a more thorough data analysis)
- Presentation and evaluation of the EPFL module (with a more thorough data analysis)

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- Presentation and evaluation of the ECN module, together with a link to NWP-modelling.
- Alternatively, and to my mind, a very interesting paper would be to present all the parameterizations in one paper, but evaluated on a common dataset so that real conclusions and guidance to the scientific community on the different parameterizations can be given

The authors should simply do a better work on writing shorter and more focused scientific paper. The paper in the present form should therefore be rejected.

The more detailed comments are of less interest since a new paper first should be presented before a more detailed review is carried out.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 12119, 2005.

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