

Interactive comment on “Meteorology applied to urban air pollution problems: concepts from COST 715” by B. Fisher et al.

Anonymous Referee #2

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General comments

This is a concise, well written paper which reviews a number of concepts in urban meteorology. Particular attention is given to their application in air quality assessment and modelling studies.

Especially the figures describe and explain very well the different concepts, and the rather large number of layers which can and need to be distinguished.

The paper is a very good introduction to the concepts used in COST 715.

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Specific comments

The determination of the height of the roughness sublayer is described, resulting in the advice to use in general 2 Zh for “European type of cities” . The question arises whether more can be said about the restrictions in using the factor 2. It is interesting to note that in fig 3, a factor larger than 2 is used.

Also the relation with the blending height is not fully clear. Is the blending height, which is not shown in one of the figures, similar to the “surface layer” of fig 3, or should it be compared more to the roughness sublayer?

An other aspect for further analysis might be the following. In chemical transport models emissions are inserted per grid. These emissions, apart from point sources, are given as surface emissions, also over a city. However, what should be done is to define “effective emission sources” at a certain height. These effective sources should also take care of the chemical transformations, for example NO-NO₂-O₃ which take place inside the city. It would be interesting to consider at which height this effective source should be defined. Would that be the roughness sublayer, or the surface layer???

Technical comments

None, no typo's etc found

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 7903, 2005.

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