

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

**Anonymous Referee #1**

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Meteorology applied to urban air pollution problems: concepts from COST 715

Fisher, Kukkonen, Piringer, Rotach, Schatzman

The manuscript is a faint reflection of the excellent work carried out in the COST715 project and reported in the final COST715 report. In the hope is that this manuscript will encourage the readers to consult the COST715 reports, I recommend publication.

Chapter 2: Although it is a selective review of COST715 the organization of the manuscript and the selection of material is rather confusing. An example is chapter 2 on the NUSAP method with the elaborate discussion on “assessment” and “pedigree” that seems of little relevance for this manuscript. The NUSAP method is to my

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knowledge not discussed in the COST715 reports The space could be used better.

Chapter 4, 3 paragraph: In the energy balance, the energy partitioning is not defined and the whole discussion difficult to follow (unless you already are familiar with the topic).

Chapter 5, 6 paragraph. In the discussion on the urban mixing height, I miss the important conclusion from the COST715 report that “for the convective UBL simple slab models were found to perform quite well” (can be placed after (Baklanov 2001a) and in this way comes just before the discussion on the mixing height under stable conditions).

Chapter 5, 3 paragraph. A note to the authors: turbulence intensity is  $\sigma_u/u$  , therefore you should write “the intensity of the turbulence”

Chapter 5, 3 paragraph. How can an internal boundary layer be uniform, if it is uniform it is a boundary layer.

Chapter 5, 3 paragraph. The urban wind profile is not necessarily logarithmic but the profile depends on the stability.

Chapter 5. Example scheme: I am a little confused by this example that I do not recall having seen in the COST715 report. I do not have access to the final report and therefore might be wrong. Nevertheless I professionally do not agree with the working hypothesis  $z_{ref} = d + 10m$ . However this is my personal opinion and I might be wrong and the authors might be right. I believe that in an UBL  $d + 10m$  is way inside the roughness sub-layer where the turbulence is highly spatially variable, the reference height should be much higher, up to 3-5 times the building height.

Figures. The references in Fig. 2 are missing in the reference list.

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