

Interactive
Comment

Interactive comment on “Review and uncertainty assessment of size-resolved scavenging coefficient formulations for snow scavenging of atmospheric aerosols” by L. Zhang et al.

Anonymous Referee #2

Received and published: 30 July 2013

The manuscript "Review and uncertainty assessment of size-resolved scavenging coefficient formulations for snow scavenging of atmospheric aerosols" is in general well-written and provides a good summary of existing knowledge.

The challenge in snow scavenging studies is that last years there has been only limited number of experiments and field observations. In general this limits the possibilities to improve parameterizations / attempts to utilize theoretical work in models. Thus it would be beneficial (both for modelers and experimentalists) to stress in the conclusions a need for new experimental data: this is needed both for quantifying magnitudes of different processes, and validating the theoretical approaches.

C5345

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Interactive Discussion

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Please add few sentences from your own perspective: what kind of specific experiments (type, property, range) would you need? Where are the most crucial gaps in the observations/experiments?

It is possible to play forever with different formulas, do sensitivity studies, apply the parameterizations to global models but my own opinion is that advances in this field, also on theoretical work, need at this stage experiments. However, this comment is not directed to the authors of this paper but rather to the experimental community.

As the two other referees already went deep in their comments, I will not repeat their work – the manuscript is good, within the limits, out of scope of this manuscript, mentioned above.

Specific comments: I think the authors should show also the parameterization by Kyro et al in Figs 7,8,10 - experimental data is so limited both urban and rural data should be utilized for comparisons (please see also Ref#3, C13).

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 14823, 2013.

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