

Interactive comment on “Development of a parameterization scheme for calculating dry deposition velocity of fine, coarse and giant particles” by L. Zhang and Z. He

Anonymous Referee #1

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This Technical Note is a short description of a simplified parameterization of dry deposition velocities for aerosols. I have a few concerns:

1. Given the size distribution assumptions made here (the specific values of the median diameter and standard deviation) how universally applicable is this parameterization? Would the fitted parameters be identical for all other log-normal size distributions which might be characterized as “PM2.5”? or are these parameters only relevant if one assumes this specific size distribution? The authors should address this by exploring the sensitivity of their fitting to the assumed size distribution and discuss these results.

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2. It is disappointing to see only the comparison of this new scheme to the old Zhang et al. (2001) scheme. It would be far more informative to show the scheme performance against real measurements.

3. The figures in the supplement are not very informative. I suggest that the authors eliminate the supplement (or at a minimum integrate these figures into the main text – it is distracting to have a supplement on such a short paper).

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1. The manuscript title should begin with “Technical Note:” following the ACP manuscript requirements: http://www.atmospheric-chemistry-and-physics.net/submission/manuscript_types.html

2. The figures all require legends or more descriptive captions to identify data vs fitting, etc.

3. Abstract, line 18: what does “reasonably well” mean? I suggest that the authors quantify this statement

4. Page 31291, line 12: authors should specify “air mass concentrations” here, otherwise this could imply number concentrations

5. Page 31292, line 4: I find the phrasing “According to the findings of..” a little strange in this case. Unless Zhang et al (2012) suggested that a bulk scheme be developed for these 3 size ranges, it is incorrect. I believe the authors mean that their decision to develop a scheme for 3 bins is based on the conclusions of Zhang et al. (2012). “Following the findings of..” may therefore be more appropriate

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 31289, 2013.

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