

Interactive
Comment

Interactive comment on “Particulate matter, air quality and climate: lessons learned and future needs” by S. Fuzzi et al.

Anonymous Referee #2

Received and published: 29 March 2015

The MS is well written and very wide. It is important step forward in aerosol – climate – air quality interactions. However, there are minor items, which will improve the quality of the paper further.

1) Generally: It would be important to discuss more on continental feedback loop corresponding to marine CLAW hypothesis (Kulmala et al., 2004) 2) Page 551: There are newer references on mass composition measured by AMSs than mentioned there. 3) Page 554: Wrong reference – instead of Kulmala et al (2012) should be Kulmala et al. (2011), both give in reference list. 4) When discussing on NPF, the most recent overview paper, should be mentioned. (Kulmala et al., 2014) 5) Page 560: Actually ELVOC were already predicted by Kulmala et al. (1998) 6) Page 570: Dry and wet deposition measurements performed at Boreal forests are mainly missing (see e.g.

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Laakso et al. 2003) 7) Page 704: The scoring system is unclear. It seems in table caption that 3 is maximum, still the average score is over 3.

References:

Kulmala M., T. Suni, K.E.J. Lehtinen, M. Dal Maso, M. Boy, A. Reissell, U. Rannik, P. Aalto, P. Keronen, H. Hakola, J. Back, T. Ho_mann, T. Vesala, P. Hari, 2004, A new feedback mechanism linking forests, aerosols, and climate, *Atmos. Chem. Phys.* 4, 557-562

Kulmala M, Petaja T, Ehn M, Thornton J, Sipila M, Worsnop DR, Kerminen V-M: Chemistry of atmospheric nucleation: on the recent advances on precursor characterization and atmospheric cluster composition in connection with atmospheric new particle formation, *Annual review of physical chemistry*, Volume:65, Pages:21-37, DOI:10.1146/annurev-physchem-040412-110014, 2014

L. Laakso, T. Grönholm, U. Rannik, H. Vehkamäki, M. Kosmale, V. Fiedler, M. Kulmala: Ultra fine particle scavenging coefficients calculated from six years field measurements. *Atmospheric Environment*, 37, 3605-3613, 2003

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 15, 521, 2015.

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