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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Investigation of nucleation events vertical extent: a long term study at two different altitude sites" *by* J. Boulon et al.

Anonymous Referee #2

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First of all I want to apologize my late response with my comments. This manuscript deals with long term observations of new particle formation at two close by sites that are at different elevation. In sense it is quite unique, though Komppula et al. 2003 also analyzed new particle formation event at two different heights but the elevation difference was much smaller. The analyses are done well and English is good. I recommend this manuscript to be published in ACP with minor changes. Suggestions/questions: Introduction In introduction Komppula et al 2003, should be mentioned.

Measurement sites; the puy de Dôme site is quite extensively described but from Opme site very little information is give. More extensively description also instrumentation of

Opme site should be given.

How were losses in different wind condition calculated, reference.

4.1 Nucleation events. . . page 8256, from line 25; average growth rates are given with quite accuracy. Is there any seasonal variation in growth rates

4.1.1 the role of sulfuric acid page 8258, line 14; year should be 2009

4.1.2 air mass backtrajectories influence Air mass are stated to come from Africa, western or eastern Europe, is there some definition like percentrages how much air mass spend in certain part. How about vertical transportation, is there differences ?

5.1 The atmospheric composition Was CS calculated from DMPS data? Both sites ?

5.2 O cases:. . . When there were no event at puy de Dôme it was inside cloud or vicinity of clouds. Was there clear sky at Opme site? Could this be also one reason, of course added to others ?

6. Conclusions Page 8269 from line 20; Between different cases little is said about differences in CS, formation and growth rates. This could be analyzed more extensively.

References, I did not find Kerminen et al 2010 in the text.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 8249, 2011.