

Interactive comment on “Fine particle pH and gas-particle phase partitioning of inorganic species in Pasadena, California, during the 2010 CalNex campaign” by Hongyu Guo et al.

Anonymous Referee #1

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Guo et al., Fine particle pH and gas-particle phase partitioning of inorganic species in Pasadena, California, during the 2010 CalNex campaign

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General comments:

Though similar measurements of fine particle pH have been described by these authors previously, those measurements were for different locations and/or seasons. Here the authors show that fine-particle pH at Pasadena, though still quite acidic, is about one unit higher than comparable measurements made in the Southeast US during SOAS. Further insights are drawn as to the reasons for these differences, and why nitrate is

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higher in LA than in the Southeast.

This is an interesting paper, in my opinion worthy of publication in ACP. I have no significant scientific comments to make. In addition, the paper is generally very clearly written.

Minor technical corrections by page and line number:

p. 2, line 9: "nitric acid, ammonia and nitrate, ammonium" is awkward. The phrasing used on line 29 (and elsewhere) is much clearer.

p. 3, line 20: delete extraneous word "details"

p. 4, line 11: is "time of light mass spectrometer" correct here, or should it be "time of flight"?

p. 4, line 19: define PFA

p. 5, line 5: insert "negative" before "logarithm"

p. 9, line 12: change "if" to "whether the" (or "whether the shift of one pH unit...")

p. 10, line 24: "highly scatter data" is ungrammatical; please revise

p. 12, line 3: could the authors provide a reference or any data on coarse mode inorganic aerosol concentrations during CalNex?

p. 15, line 7: Alduchov and Eskridge is not cited in the text.

Figure 5: consider deleting the word "Measured" from the y-axis label, since theoretical S curves are also shown.

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