

Interactive comment on “Evaluation of a Sequential Spot Sampler (S3) for time-resolved measurement of PM_{2.5} sulfate and nitrate through lab and field measurements” by A. Hecobian et al.

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***The authors would like to thank referee #2 for her/his review of the manuscript and suggestions for its improvement.

Abstract, line 14: please specify what PEEK stands for in the abstract.

***Done.

Section 2.1. What is the size range of particles that can be collected by the S3? The authors stated “Particles as small as 8nm grow through...”. Is 8 nm considered the lower limit of the size range? What about the upper limit? Have the authors quantify

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the collection efficiency of the aerosol components as a function of particle size?

***Section 2.1 has been re-worded and a few sentences added to clarify the range of the particles measured by the S3.

Page 10616, line 24: change “, 30min” to “was 30min”

***Done.

Page 10620, Line 6: Is the IC coupled with PILS the same model as the Dionex IC used for offline analysis?

***The brand of the IC used was Dionex, but the model was different. The model number has been added to the text.

Figure 6(c): the correlation between the S3 Nitrate and PILS Nitrate seems to be mainly driven by the three points in the upper right corner of the scatter plot. Same for panel (d) although to a lesser degree. The points at the lower concentration end appear to be more scattered. What would the r^2 of the correlation be without these three high concentration points? And if the r^2 is significantly reduced by excluding these points, can the authors provide an explanation for the lack of correlation between the two instruments when the concentrations were relatively low?

***A paragraph has been added to section 3.2 to report the values of r^2 and slopes when the top 75th percentile of the data are removed and the residuals of the regression analysis are presented in Figure S1 in the supplemental material.

Section 3.2. Could the authors comment on the possible loss of the semi-volatile aerosol component, e.g. nitrate, from the sampling well as they were kept under ambient temperature for an extended period?

***During sampling, except for the active well, the wells are kept at ambient temperature and are covered by a Teflon lid. This should minimize the possible loss of semi-volatile aerosols components. Additionally, Eiguren-Fernandez et al. (2014), discuss the loss

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of volatile material in the sampler in their study. They show no loss of nitrate during collection or storage on the sampler.

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