

## ***Interactive comment on “Exploring the Applicability and Limitations of Selected Optical Scattering Instruments for PM Mass Measurement” by Jie Zhang et al.***

### **Anonymous Referee #1**

Received and published: 22 February 2018

The manuscript by Zhang et al. evaluated three optical sensors through both laboratory and field measurements. The results show a large variability in response for these optical instruments depending on aerosol size and compositions. In recent years, the portable optical instruments are becoming more and more important in aerosol particle measurements, yet the performance is not fully evaluated yet. This study is critical for future users by providing important information on measurement uncertainties. This manuscript is overall well written, and I recommend it for publication after minor revisions.

Comments:

C1

1. Suggest describing briefly the major conclusions how aerosol size, composition and refractive index influence optical response in the abstract.
2. Abstract, line 13 – 15, rephrase. It is difficult to read.
3. Page 2, second paragraph, suggest adding some discussions on vertical measurement to highlight the advantage of portable scattering instruments.
4. Page 4, line 2, make sure the density of PSL. It is 1.05 g cm<sup>-3</sup>.
5. Page 5, line 7, any reasons for choosing these four different compounds?
6. Use log scale for x-axis in Figure S3.

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-469, 2018.

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