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Atmospheric Measurement Techniques Discussions

Interactive comment on "Electrodynamic balance measurements of thermodynamic, kinetic, and optical aerosol properties inaccessible to bulk methods" *by* S. S. Steimer et al.

Anonymous Referee #1

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I apologise for the delayed review.

Minor points Page 693, section 10. "The method becomes difficult to apply if the rate of size change is small". What is the rate of change limit? What is the particle size limit of detection, several resonances are used to accurately size, but at what point does this method start to become unfeasible? How do you know you are at 78-101deg scattering angle? As light collection is slightly off-centre did the authors use a shifted angular range that repetitively gave a better particle size and refractive index fit, or was this angle measured with respect to 90 degrees? Page 693. Section 25. ". . .and measure both polarisations sequentially". How long between measurements from the

two polarizations? Would this affect measurement of highly volatile compounds? Fig 2 caption (a). "Relative humidity measured close to the droplet". Is the RH probe taking measurements inside the cell or on the RH line before the chamber? Page 694. Section 20. The authors state the m(TDL) real part of the refractive index has an accuracy of better than 0.005. But the values quoted in figure 4 are noted as m(TDL,H20) = 1.3292, m(TDL,s)=1.541, m(D,H2O)=1.3334 and m(D,s)=1.574. This accuracy does not match with the limits of the experimental detection. Why is there such a difference for the two m(TDL) values? Is the 0.005 accuracy a conservative value? Fig 7 Caption. Should include, "three different shikimic acid particles", in the description.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 689, 2015.