

Atmos. Meas. Tech. Discuss., referee comment RC1
<https://doi.org/10.5194/amt-2021-108-RC1>, 2021
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Comment on amt-2021-108

Anonymous Referee #1

Referee comment on "A dual-droplet approach for measuring the hygroscopicity of aqueous aerosol" by Jack M. Choczynski et al., Atmos. Meas. Tech. Discuss.,
<https://doi.org/10.5194/amt-2021-108-RC1>, 2021

Review of "A Dual-Droplet Approach for Measuring the Hygroscopicity of Aqueous Aerosol"
by Choczynski et al.

The authors presented a linear quadrupole electrodynamic balance (LQ-EDB) method for levitation of dual droplets that can be used for accurate measurement of hygroscopicity of aerosol particles. By using NaCl and LiCl as probe droplets, the range of accurate relative humidity (RH) determination was extended compared to the previous version. The improved technique was applied to study particles containing viscous species and volatile ones, demonstrating its abilities to investigate particles of kinetic limitations and evaporative loss. The experimental setup is well designed and implemented, with great details provided. The experimental results of a few atmospherically relevant species are also clearly presented, backed by literature data and/or thermodynamic model results. The manuscript is generally well written, but I found some places difficult to follow (some examples in technical comments). I therefore recommend publication of this manuscript after Minor Revision. My comments, as shown below, are rather minor too.

Minor comments:

- P9/L276: larger than what?

- P9/L295-296: this sentence is a bit difficult to follow. Maybe better to present it in two sentences.

- Figures 2 – 7: it would be good to put a “(%)” after the “RH” in the x-axis title, and use rGF as defined in the text as the y-axis title.