

Interactive comment on “Towards continuous monitoring of aerosol hygroscopicity by Raman lidar measurements at the EARLINET station of Payerne” by Francisco Navas Guzmán et al.

Anonymous Referee #1

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Summary:

The manuscript describes the retrieval of aerosol hygroscopicity from Raman lidar measurements. Also included is a comparison of mixing ratio, temperature and relative humidity profiles from lidar with those from radiosondes. This is a comprehensive paper of, in my opinion, very high interest to the atmospheric remote sensing community. Therefore, I recommend this work to be published in ACP. However, there are some minor points that need to be addressed before publication. My general comments are given below. Please note that specific comments and technical corrections are provided in the attached document.

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General comments:

Most importantly, I'm missing a discussion of uncertainties in the part of this study about the impact of hygroscopicity of aerosols on the radiative budget.

Another aspect to correct is the consistency within this manuscript. Generally it is recommended to use present tense describing established knowledge and previously published work, and for presentation of results (Figure 1 shows . . .), and to use past tense describing methods and results, and for referencing (Author X reported . . .). I have added comments in appropriate places throughout the manuscript, but it would be helpful to give the finished manuscript to a native English speaker to check the language. There are also inconsistencies in some units, especially altitude measures are given in m and km, and in date formats. In figure captions alone, there are many different date formats (8 of September 2017, 7th September 2017, 3 September 2017, 07 September 2017), please homogenise these throughout the text and captions.

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2019-289/acp-2019-289-RC1-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-289>, 2019.

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