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Atmospheric Chemistry and Physics Discussions

# *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 #2**

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Review for manuscript "Towards continuous monitoring of aerosol hygroscopicity by Raman lidar measurements at the EARLINET station of Payerne"

Authors study important problem of the aerosol hygroscopic growth basing on long term multiwavelength lidar observations. The research is done on high scientific level. Authors well understand all the issues, when the information about humidification process is extracted from lidar measurements. Manuscript is well written and can be published after minor revisions. The Reviewer 1 provided very detailed review, so I can add just several technical comments.

Title. I agree with Reviewer 1 that title can be shortened.



p.10, ln 24. "From this figure, a marked increase of with altitude is observed for the altitude range between 1.7 and 2.3 km (asl)." The same time for range 1.5-2.0 backscattering doesn't increase significantly, though RH rises. Any ideas why (potential temperature and mixing ratio are quite stable)?

Fig.7. What will happen with these curves and Hanel parameters if starting height is 1.5 km? How sensitive are results to the choice of height interval?

Fig.11-13. Figures should be done in the same style: size, format, fonts, grids should be kept the same. Some fonts are very small, difficult to read. Probably Fig11b,c can be shown on the same plot.

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