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Interactive comment on "Validation of temperature data from the RAman Lidar for Meteorological Observations (RALMO) at Payerne. An application to liquid cloud supersaturation" *by* Giovanni Martucci et al.

Anonymous Referee #1

Received and published: 6 November 2020

The authors describe a study for the validation of temperature data from the RAman Lidar for Meteorological Observations (RALMO) at Payerne (July 2017 to December 2018) against two reference operational radiosounding systems (ORS) co-located with RALMO. The overall quality of the preprint, is characterized by well-illustrated methods and scientific significance, contributing to scientific progress within the scope of Atmospheric Measurement Techniques. GENERAL COMMENTS There are too many numbers presented on the abstract and it is hard to understand the meaning of each one. Although it would be easier to pull out the main message if an additional table showed

all the values separately for daytime and nighttime measurements, declaring also that daytime corresponds to lower troposphere and nighttime to whole troposphere. SPECIFIC COMMENTS During daytime measurements in the lower troposphere, and nighttime measurements in whole troposphere, mean bias are found $\mu = 0.02 \pm 0.1$ K and $\mu = 0.05 \pm 0.34$ K respectively. How would you comment those big errors? TECHNICAL CORRECTIONS Page 1 Line 18-19 "imperfect subtraction" of the background from the daytime PRR profiles induces a bias of up to 2 K at all heights. In which figure is this represented? Page 3 Line 3 "Trustworthy references can be provided by co-located radiosondes, satellites or a numerical models." Propably "a" should be removed. Figure 1 (and for all similar graphs) St. dev and median are calculated after averaging, so maybe it should be mentioned at the label. Page 4 Line 9-10 "Figures 1 and 2 show the statistical biases of the SRS-C50 and the RS41 with respect to the reference RS92 as a function of height for the day and night-time launches." In order to be better-structured, figures or the SRS-C50, RS41 should be reversed. Page 11 Line 23 "Once the signals corrected, their ratio is used used to retrieve the temperature" the word used should be removed.