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Interactive comment on "Recommendations for processing atmospheric attenuated backscatter profiles from Vaisala CL31 Ceilometers" *by* Simone Kotthaus et al.

Anonymous Referee #2

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This manuscript is an excellent example of how the scientific community (COST-TOPROF) can positively influence industrial developments (Vaisala).

The given final recommendations, along with the detailed corrections procedures, can serve the CL31 ceilometer users well. Simultaneously, it is shown how a nontrivial and especially technical approach should to be undertaken, to properly use available off-the-shelf instruments.

I must agree with the Referee#1 that the weak point of the manuscript is the somewhat confusing introduction. I feel the introduction comes across as rather general, referring to scientific investigations conducted with any type of ceilometer. From one aspect, this is an interesting approach, as there are not that many technical or scientific papers on

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Discussion paper

ceilometer remote sensing. However, the authors mention to great extent, only those publications that are referring to the CL31 ceilometer. It would be more beneficial to guide the reader toward studies also performed with other ceilometer types, such as

Heese et al., Ceilometer lidar comparison: backscatter coefficient retrieval and signal-to-noise ratio determination, Atmos. Meas. Tech., 3, 1763–1770, 2010

Stachlewska et al., Ceilometer Observations of the Boundary Layer over Warsaw, Poland, Acta Geophysica, Vol. 60, No. 5, 1386-1412, 2012.

There are also comparative studies that were conducted with various types of ceilometers and/or other instrumentation or model outputs, that in my opinion, should be mentioned; to name just a few

Madonna et al., Ceilometer aerosol profiling versus Raman lidar in the frame of the INTERACT campaign of ACTRIS, Atmospheric Measurement Techniques, 8(5):2207-2223, DOI: 10.5194/amt-8-2207-2015

Emeis et al. Observation of the structure of the urban boundary layer with different ceilometers and validation by RASS data, Meteorologische Zeitschrift, Vol.18, No. 2, 149-154, 2009

Selvaratnam et al.: Comparison of planetary boundary layer heights from Jenoptik ceilometers and the Unified Model Forecasting Research Technical Report No: 605 October 13, 2015

I would however like to mention that I do appreciate how clearly and succinctly this paper is written, in particular the summary.

I hereby recommend publishing the manuscript after minor revisions.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-87, 2016.