

## ***Interactive comment on “Aerosol backscatter profiles from ceilometers: validation of water vapor correction in the framework of CeiLinEx2015” by Matthias Wiegner et al.***

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This study performed the validation about the ceilometers whose spectral range around 910 nm are influenced by water vapor absorption when used to retrieval aerosols. The authors compared ceilometer backscatter signals with measurements of the reference system extrapolated to the water vapor regime. They solved the key problem of the spectral extrapolation of particle optical properties. They found the vertical range where validation is possible is limited to the upper part of the mixing layer due incomplete overlap, and the in general low signal to noise ratio and signal artefacts above that layer. A quite good agreement between the extrapolated reference signals and the

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measurements in the case of CL51 ceilometers at one or more wavelengths in the specified range of the laser diode's emission was obtained after the effective water vapor correction. The paper is clearly written. Overall, this is a nice paper and well-conceived effort of value to the community of atmospheric measurements. I suggest its publication on the journal of AMT after some technical corrections revised by the authors. No extra data or processing are needed. From a general aspect, I would suggest to shorten the paper a bit, for example "The validation range" and "the results parts".

Technical corrections:

1, Page 3, Line 4, "measurements of a CYY-2B ceilometer (CAMA) that was deployed in China were reported", here, the reference is missing.

2, Some legends should be added on the figures, for examples, Figure 1 - 7, 10-12, 14-16, 18 and 19, to describe the colored lines or circles for being easily understood, instead of only describe in the texts.

3, It is not necessary to show the low signal to noise ratio parts in the high free atmosphere on Figure 9, 13, and 17. My suggestion is to shorten the vertical height to 3.5 or 4.0 km to present the images more clearly.

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