

***Interactive comment on “Validation of aerosol backscatter profiles from Raman lidar and ceilometer using balloon-borne measurements” by Simone Brunamonti et al.***

**Anonymous Referee #1**

Received and published: 1 July 2020

The paper presents an interesting comparison between the aerosol backscatter coefficients measured by two different lidar systems (a sophisticated multiwavelength lidar with elastic and Raman channels, and a ceilometer) and those obtained by a balloon-borne instrument performing in-situ measurements. The latter is taken as reference to validate the backscatter profiles provided by the lidars.

The paper is well written and describes a sound methodology that, besides providing the validation mentioned in the paper's title, can be useful for similar verifications at other sites.

I think the paper is worth publishing (although given its scope, focusing on techniques

C1

and methods rather than on atmospheric processes, perhaps the sister journal Atmospheric Measurement Techniques would provide a more suitable forum).

The authors may wish to consider the following remarks that in my view would improve the manuscript (see attached pdf).

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2020-294/acp-2020-294-RC1-supplement.pdf>

---

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-294>, 2020.