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# *Interactive comment on* "25 years of Cloud Base Height Measurements by Ceilometer in Ny Ålesund, Svalbard" *by* Marion Maturilli and Kerstin Ebell

**Anonymous Referee #3**

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Review of the manuscript "25 years of Cloud Base Height Measurements by Ceilometer in Ny-Ålesund, Svalbard" by M. Maturilli and K. Ebell in Earth Syst. Sci. Data Journal (essd-2018-48).

The presented paper uses a 25 year data set of cloud base height measured with three different ceilometers (three different periods). The authors present a description of a case about a small cyclonic system based on CBH data and also longwave irradiance and temperature data. They also add ceilometer data in order to understand better the data provided by a cloud radar. Finally, a statistical analysis about the percentage of cloudy sky is discussed and also the time series of the CBH median, indicating that



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results could not be representative since the inhomogeneities in the time series caused by the changes on the instrument. In general this work fits with the scope of the journal and I consider it must be accepted after some minor revisions.

- Abstract: The abstract should not be equal to the introduction section, it should describe a little more what authors will do in the full paper.

- The objective of the paper is not clear in the text.

- Figure 1 does not provide any significant information, it could be removed.

- P4L6: This sentence should be in the introduction but not in this section.

- P4L7: The description of cloud radar fits better in the data section “data”.

- P5L18: The median of CBH trends should be quantified by Theil-Sen estimator or others, even homogeneity test could be done in order to stablish the inhomogeneities of the time series. In addition, the time series and trends of the percentage of cloudy sky should add more value to the paper.

- P5L28: but a homogeneity analysis could be done, or at least study the trends in the period of each ceilometer.

- P5L31-32: The results of this work do generally not prove that.

- Figure 4: A legend could help to understand the bars.

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