

## ***Interactive comment on “A two-year intercomparison of CW focusing wind lidar and tall mast wind measurements at Cabauw” by Steven Knoop et al.***

### **Anonymous Referee #1**

Received and published: 24 November 2020

This is an excellent paper investigating the long term performance and measurement capability of a commercial Doppler lidar under the range of measurement conditions encountered over a two-year period. The data analysis and presentation of results is quite meticulous, with critical areas important for application of this lidar identified, examined and discussed. I find the paper for the most part acceptable as submitted, but here include a few minor comments which the editor and authors can optionally consider.

Line 25: Coherent lidars also measure the shift of the frequency spectrum, albeit by a different methodology.

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Line 60: It should be noted that changing the focal length also changes the depth of focus (i.e., probe length).

Line 65: It would have been interesting to find cases over the two year period where clouds existed beyond the minimum range to investigate performance of the cloud removal algorithm.

Line 192: It seems possible in the broken cloud case that the presence of clouds beyond the maximum range might be leading to more QC failures. Broken clouds might be expected to be higher and more likely to contribute to this effect.

Line 257: Higher biases at longer range under low cloud/fog conditions could be due to asymmetric range weighting, where the signal at the more distant range of the probe volume has been attenuated relative to that at the closer, resulting in the effective measurement distance being closer to lidar than the focal range.

Line 269-272: These are quite good results.

Figure 13 (caption): Seems like the caption is missing the word "greater" before "than 4 m/s" in line 2.

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