No doubt the article should be published, it is a major contribution and clarification on the experiments performed. There are some confusing elements and also some technical structure which could be better, the comment will be focused one request of some clarification and improvements of the text.

Corrections needed:

C1 (major correction) Abstract, p1, l11 and l124
"the larger measurement probe volume" (L11) is directly in conflict with the actual results and the statement in L14 "lidars to accurately measure small scale flow structures".
This language should be more precise and accurate to the results. My suggestion would be to accurately describe two things:

a) The measurement volume of the LIDARs is 13 to 50 cm, allowing average flow features to be resolved at 0.11D to 0.57D in the far downstream of the three turbine.
b) The same volume limitation results in an effective spectral cut-off frequency between 22 and 11 Hz, respectively. This is compared to high resolution HW data.

C2 (minor), p1 L14
Why is "January 2016" important ? Maybe reformulate.

C3, (please elaborate) w-influence, p4, L24-28
w is neglected and deemed insignificant. Never the less, it is measured to be 0.08 m/s and must surely introduce a bias, especially as the vertical projection of the measurement volume is between 0.7 and 2.6 cm (at 3 deg downwards beam orientation, and the two ranges given in fig 5).

C3 (major correction) coordinates of fig 4
Please correct figure 4, so the coordinate system can be understood. Preferably x/D and Y/D, so it is comparable to figure 3

C4 (major correction) "rated conditions", P6, L15 and L19 (possible other places)
"turbines operating under rated conditions" is nonsense. In rated conditions, the pitch of the blades is going positive and all research shows the wake disappears. So, I am pretty sure the author means that the turbine is operating close to maximum wake deficit or maximum Cp. Please be specific: TSR = xx, Pitch = xx, corresponding to an estimate Ct of xx, resulting an estimated wake deficit of xx.

C5 (minor) TI p7, L2
Why not be specific, TI=5.4% (as measured, table 1)

C6 (major) Table 1 and text on p7
There is an average v and w component. Albeit fairly small it is not really clear if this is a flow feature or probe misalignment ? Please be precise in the language about this.

C7 (major) Table 1 and text on p7
There is no difference between u' and v' in the table, but yet a very velar difference in figure 8 and 9 scatter ? Either observe or comment on this.

C8 w component
Same comment as C3

C9 Error in figure 9
The offset in fig 9 red curve is indicated to be 0.00 – Looks like a mistake. Please check.

C10 (major) effects comparing fig 8/9 to 12/13
P9, L2 "the mentioned effects caused the scatter". I don't think this is accurate. The 3 mentioned effects (p7 L23 to p8 L2) is bias effects. Why would bias effects cause scatter ? The more likely effect is that the small scales are not resolved by the LIDAR.

C11 (minor) p9 L3
Delete "most of the very"
And
"are omitted here" maybe you mean is "averaged away by the large measurement volume"

C12 (minor) p9 L5 and L6
L5 "in the wind tunnel" should be "in the wind tunnel at 1 Hz".
L6 "are estimated that well" should be "at 1 Hz follows the same trend".

C13 (major) p10, L10
The spatial resolution is given to be in the range 0.13 to 0.5 me. This gives ½*5.6/0.13 to ½*5.6/0.5, which is 22 Hz to 5.5 Hz temporal resolution.

It is generally misleading that it is suggested the LIDAR can measure up to 390 Hz. And the results shows the true range of resolution is 5.5 to 22 Hz. Please correct this throughout the paper.

C14 (major) figure 16
Introduce 5.5 to 22 Hz. 28 Hz is inaccurate.
Also, 5/3 rule should be 5/3 Kolmogorov (since "rule" is not discussed)

C15 P11, figure 17/18
It would be prudent to present 22 Hz (or maybe 5.5Hz) filtered data.

C16 P11, comments pertaining to figure 18 and w-component
It would be prudent to comment that at 3D the w-component is not insignificant and this could have resulted in the "v-component signature", otherwise the reader is left with the impression that this is the turbulence, which is probably not the case.

C17, P11, L16 (minor)
"determine local 2D effects", I think you mean "measure a cross section of a wind turbine wake" or something like that

C18, P11, L19
"as well as tip vortex". I don't think that is very clear. It could be turbulence in the shear layer, or the w-component or the shear layer itself.

C19, P11, L21 (major)
I tin you either need to reference where the "turbulence in the lower region" has been observed in other studies, or reference shear layer or make it clear that your speculating. Because it could be due to velocity bias in the measurement.

C20 Figure 19 and 20
Introduce 19 a , 19 b and 20 a and 20 b for clarity.

C21 Figure 20
There is a clear periodicity in figure 20, v – component. Is this due to reconstruction or something else. The periodicity is about 1.8 m ? Also there is some strange signatures of u and v velocity at y/D = 1 and -3 which occurs to be artificial ?

C22 Figure 20
There is distinct different direction on the v-component coming of the rotor comparing turbine 1, 2 and 3. Why ? is there a missed observation ? measurement error due to w- component ?

C23 Figure 21 and 22
Introduce 21 a , 21 b and 22 a and 22 b for clarity.

C24, p12, section 3.4
I am not wildly convinced the uncertainty analysis is fully representative. The two conditions given on pg. 12 does not include a number of factors. Also there is not consideration of bias errors, which may very well be higher than the uncertainty presented. I appreciate the authors can not give this now, but at least elaborate a bit more on other potential sources and their nature.

C25 Conclusion
This: "Because of the lidar measurement principle, between 10-15% of the data is lost due to the moving wind turbine blades in the measurement region" is hardly discussed in the paper, and not what the paper is about. Suggest to strike.
It would be prudent to summarize resolution results, frequency and measurement volume overD.
Also, comment on future work ?