Comment on wes-2021-149
Wim Bierbooms (Referee)

Referee comment on "Turbulence statistics from three different nacelle lidars" by Wei Fu et al., Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2021-149-RC1, 2022

This is an excellent paper about an important and relevant topic. I have just a few remarks, mainly to improve clarity:

- Eq. (22), mention that, refer to Eq. (5), $n_1 = -\cos \phi$, $n_2 = \cos \theta \cdot \sin \phi$ and $n_3 = \sin \theta \cdot \sin \phi$

- line 181: explain in a few sentences why "we need at least six radial velocity variances from different beam directions"

- line 268: "below 0.2 m/s"; shouldn't it be "above"?

- line 269: why 100? (perhaps a reference can be added)

- caption Fig. 5: introduce "beam index"

- line 292: explain "bore point"

- section 4.3.2: perhaps a 3rd option can be applied, according to the IEC: $\sigma_v = 0.7 \sigma_u$, $\sigma_w = 0.5 \sigma_u$

- Fig. 15: add titles on top of the 3 rows: "maximum", "median", "centroid"

- Fig. 16: add titles on top of the 3 rows: "LSP $\sigma_u^2$", "LSP isotropy", "U variance"