Wind Energ. Sci. Discuss.,
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Interactive comment on "Offshore and onshore ground-generation airborne wind energy power curve characterization" *by* Markus Sommerfeld et al.

Anonymous Referee #2

Received and published: 26 January 2021

5: An universal -> A universal

8: annual energy prediction (AEP) -> production

249: I'm curious about how pressure & density vary with stable vs. unstable conditions and how much that affects power.

271: Why is a reel-out to reel-in ratio used? Is this a combination of a motor torque constraint and the lift during reel-in and reel-out?

279: Assumed lift and drag on reel-in and reel-out should be included here.

280: Was a power constraint used? It's implied in other places.

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357: I'd address elevation angle here; based on figure 10, it looks like the optimizer found a common optimal elevation angle for several of the cases, which links tether length and altitude. Vander Lind 2013 calculated an optimal elevation angle for fly-gen systems assuming an exponential wind profile; I'm curious how close this elevation angle is.

398: Missing a Uˆ3?

440: l_path and A_swept aren't in table 3

459: The fit for cp is a function of c_wing (and because AR is constant, a function of Aswept) so it's not non-dimensional and it's not clear how generalizable it is (changes in AR or L/D). I'm curious about whether another definition of cp may also be comparable to conventional wind turbines but work better. The Loyd paper (see eqs. 1 and 16) shows a limit on a cp (4/27 CLˆ3/CDˆ2) defined by wing area. What does your data show for a cp defined by Awing? Or if you express cp as a function of L/D or CLˆ3/CDˆ2?

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