



EGUsphere, referee comment RC1
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Comment on egusphere-2022-294

Anonymous Referee #1

Referee comment on "Wind work at the air-sea interface: a modeling study in anticipation of future space missions" by Hector S. Torres et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-294-RC1>, 2022

The manuscript addresses an interesting topic, estimating global wind work and presents interesting results. I like the idea to separate the time-dependent wind work to the low and high-frequency components. Though it is well written, I recommend a major revision based on my comments below:

- A more than 5 TW global wind work has been reported before as in Yu et al. 2018 (<https://doi.org/10.1016/j.ocemod.2018.07.009>) and Yu et al. 2019 (<https://doi.org/10.1016/j.ocemod.2019.05.003>). Though they focused on the wind work over ageostrophic currents (Yu et al., 2018) and used it to explain the global EKE reduction after including ocean surface currents in the wind stress formulation. But these were not cited in this manuscript. And I encourage the authors to do a more thorough search of the topic just in case.
- I like the idea of low/high frequency wind work components but wondering if the 3.5-month data long enough. Is 3.5 month a good representation of the mean component? Is it long enough for low-frequency (seasonality)? I'd encourage the authors to extend the calculation to the whole 14-month available. This is the main reason why I recommend a major revision.
- Really minor: Line 92, "January 20 using 2012 ocean initial conditions". I think 2012 is a typo otherwise would need to explain why 2012 not 2020.