

This paper first provides a consolidation and analysis of data from the FINO turbines, which will be freely provided to the public. Secondly, it examines this data in terms of the simulation length needed to assess the ULS and FLS values; and, the amount of simulation time that needs to be removed to eliminate the influence of initial transients. Below are some suggested improvements to the paper.

- The term scattering is used repeatedly throughout the paper, and I'm not sure what the precise meaning of "scattering" is here. Perhaps choose a more descriptive word, or remove this qualifier?
- You point out some large levels of variation in the parameters that are examined, and inter-dependencies. Do you have any recommendations to draw from this information on how one should proceed in regard to utilizing these measurements for design purposes? Present standards do not consider variation of wind parameters, other than wind speed and turbulence.
- You mention discarding the "start-up time". This term is also a bit confusing. Are you emulating the start-up of the turbine in your simulations? Or, are you just starting with a set of conditions? If you emulate the start-up of a wind turbine, that would mean that you have a ramping up of the turbine rotor speed, for instance. This could significantly affect the level of transient response one sees in the data. Also, if one sets the simulation directly without a ramping of the conditions, other parameters in addition to rotor speed can be set to reach equilibrium more quickly – such as mean offsets due to wind thrusts. Your meaning of how you're performing your simulations should be described in more detail. I would suggest a different wording than "start-up time".
- A more thorough description of your methodology for calculating the ULS and FLS loads should be described. Figure 10 mentions 500 simulations, and on line 23 on p. 12 you mention using 10,000 resamplings. How many seeds are you using for each condition? Are you varying wind parameters? And, do you have the same total amount of simulation time – regardless of what the individual simulation time lengths are? How are you calculating mean fatigue – and across which simulations? As mentioned in Stewart, depending on whether you combine the data into one long dataset or look at each simulation individually will affect your fatigue calculation.
- Figure 10 is difficult to read with overlapping images. I would suggest modifying. Same for Figure 12 and 13. Also, please define what the bars mean – if this is the 25 and 75%, or what.
- On p. 13, you state that the investigations suggest that simulation lengths of 10 minutes are sufficient independent of type of load, substructure, or wind speed. You have only shown a result for a monopile, and so I feel it is difficult to draw that conclusion. In addition, you have looked at one general location in terms of types of conditions, that may not represent other areas in the world. I would recommend making your statement more focused on your investigation, and not so broad. Also, I'm still unsure of the settings for the simulations you have run – please describe what conditions you considered in your simulations.
- "Inter alia" appears twice in the paper at least – I'm assuming this wording got corrupted.
- On, p. 14 you mention running 10,000 simulations for the monopile for each wind speed bin – are these the same simulation each time with exception of the seed number to randomize the spectrum? If not, what else are you changing?

- For the convergence of the fatigue based on initial simulation time removed, I'm assuming you kept the same total amount of time for the fatigue computation?
- In Figure 14 you have shown convergence assuming 300 seconds has no error. Did you prove that it is converged after this time? Same question for other plots as well.
- Convergence may also be based on the number of eigenmodes considered for your substructure. Did you use SubDyn for the modeling of the support structures and how many modes did you retain? Would the amount of time needed to be removed decrease if you consider less frequencies for the support structure? Of course, one would need to ensure that a sufficient number of eigenmodes is used to adequately represent the structure.
- How does one access the data that you have generated? You mention that "all needed data is given in the supplementary material to this work." That does not make it clear out to access the data.