Review Round 2

Paper Title:

Wind turbine wake detection and characterisation utilising blade loads and SCADA data: a generalised approach

Dear Authors,
Thank you for addressing the comments such detailed. I appreciate the implementations you made, and I especially like the increased level of discussion. Below, I gather a short list of additional comments on the revised manuscript. The line numbers I state refer to the document with tracked changes.

Comments:

1. Line 61: “Despite achieving great performance […]” please formulate this more neutral. Same as the load-based methods, the lidar-based concepts are not perfect. Their drawbacks are often a compromise between spatial or temporal observability (depending on staring / scanning lidar).
2. Line 70: Onnen et al. (2022) do not make use of the in-plane blade loads, only out-of-plane.
3. Line 80: “The up-to-date wake detection studies analysed the wake impingement in a scenario with a single upwind turbine […]” – This is certainly a valid point. But does this paper fill this gap? In your author’s response you mention that the wake overlap method in the simulation environment is "pick the maximum deficit at the point". So is the method really tested for complex overlapping wakes? Meanwhile you have a strong point showcasing the method for wakes shed at various upstream distances.
4. Regarding comment 19 from the first review round: By ‘overlap margins’ I mean the definition of ‘full’ or ‘partial’ wake. E.g. a wake position $y<0.25$ D with respect to the wake exposed turbine might be denoted full wake, a position $0.25D < y < \ldots$ denoted partial wake. I think your answer partly addresses this point already but I cannot see it in the manuscript. If it’s not possible for you to state this, since the training data only considers inflow angles, please mention this in the manuscript. At the moment it says “The wind direction differs by 5 degrees between the fully and partially impinged cases. This setup allows to clearly differentiate between the effects of full/partial wake impingement and standalone atmospheric turbulence.”
   The confusion chart is a good idea and helped here!
5. Nice that you added explanation to the unexpected performance at 5 m/s and the role of training data here.