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Discussions

Interactive comment on "Automated Wind Turbine Wake Characterization in Complex Terrain" *by* Rebecca J. Barthelmie and Sara C. Pryor

Anonymous Referee #2

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The study mainly focuses on detecting the height of the wake center through a research measurement campaign in a complex site, Perdigao, Portugal. The results are novel and interesting, I recommend for publication. My major and minor comments are listed below.

Major Comments: ———————— - In your sentences "...the remaining 33% could not be categorized either by the algorithm or subjectively, mainly due to the complexity of the background flow." Don't you think this percentage is a bit high? I think the information about such situations should be put into a clearer definition. In which cases the categorization is failed? Is it possible to enlarge the comments on the issue?

- It is also not clear to me why the initial free-stream in the code sometimes cannot be assigned. I am guessing, these cases are within the mentioned 33%. How do you

assume that the free-stream value derived from the radial velocity of the measured line of sight direction is sometimes valid and sometimes not?

- Do you find any similarities or differences between your results/measurements and the two experimental works done within the Larsen et al., 2008 study (Dynamic wake meandering modeling, Risoe-R, No. 1607(EN)?

Minor comments: ———————— - Although figure 1 is a good work of combining many information together I would prefer the line of sight lines "joined". Current view does not give any information due to the color mixed anyway. Furthermore, maybe a zoomed-in 2D plot of a line of sight vector plot might be helpful.

- Equation 4: k sign should be as it was defined in page 3 line 11 (κ), because "k" will be used for the rate of expansion later at Page 5 Line 14.

- In figure 2 and 14, your turbine sketches are downwind turbines, but 2 MW Enercon E-82 is an upwind turbine. One can misunderstand the setup.