Dear Editor,

**Re: Proof of Manuscript WES-2024-107: Direct integration of non-axisymmetric Gaussian wind-turbine wake including yaw and wind-veer effects**

Thanks for all efforts in progressing our manuscript for publication in Wind Energy Science. Following our response to first proof copy we have been notified that we require editor approval for two of the requested changes and so explain each in the following:

1. **Change to an expression on page 7**

Specifically, this refers to a change to Eq (33) and to subsequent approximations to this term in the text. This change has no impact on the meaning, the findings, the results or the derivations presented and is sought due to a mistake in the generating latex file.

In its accepted form, Eq. (33) reads

after which, we approximate the exponent to 1 as explained in the text. However, due to a mistake in the generating latex file, this exponent should be . This exponent will still be approximated to 1, and so Eq. (34) which defines the size of the rectangular disk used throughout the rest of the paper remains unchanged.

The change requested is to correct the term within the error function of the exponent of eq. 33:

Also to make the same change in the second and third lines after Eq. (33) where instances of this quantity are mentioned. This change **does not change meaning or any outcomes of the manuscript** as it isonly to a quantity that is subsequently approximated to 1 in the original and corrected version.

1. **Clarification of multiplication operator spanning lines of multi-line equations.**

The shift to double column format for the published version has resulted in many multiline equations. Continuation of multiplication operations is not explicit and is only indicated by the closure of a bracket on one line and a subsequent bracket, or individual parameter on the next line. In contrast where an addition operation forms a line break this is clearly stated at the start of the new line. In some of the multiple instances the lack of an operator across a line break presents risk of misinterpretation (e.g. eq. 8, 12, 29, A5, B2-B4 in particular). For clarity and consistency, we propose that a \times symbol is inserted at the beginning of an equation line where a multiplication operation continues onto the next line of the equation.

This clarification is noted in the proof for Eqs. (8, 9, 12, 19, 20, 27, 29, A1, A5, B1, B2, B3, B4, B6, B7, C1, C2, C4, C5, C7, D6). The location of such line breaks is a function of the WES typesetting and so could not have been identified prior to the proof. We have also annotated the proof to identify several equations where it would be clearer to break the line at a different location (to ensure a full term is within one line). This insertion of an operator symbol **does not change the meaning of any expression or the findings** and is proposed to minimise risk of misinterpretation of the derivations, and findings, presented.

Our other annotations in the second proof are with regard to consistency of bracket sizes and to avoid a split between a header and the section text appearing on separate pages. We hope that this note adequately explains our reasoning for a modification to eq. 33 and clarification of the presentation of multiline equations and look forward to publication of this study in Wind Energy Science.

Best regards,

Karim Ali, Pablo Ouro and Tim Stallard