

Review of the revised version of:

Some effects of flow expansion on the aerodynamics of horizontal axis wind turbines by David H. Wood and Eric J. Limacher file number WES-2021-52-ATC1

Reviewer: Gijs van Kuik, TU-Delft

The paper has been modified by the authors as a response to the reviews, with an explanation of the changes by the response of the authors to the two reviewers. The resulting version is almost ready for publication, only 1 topic requires a correction: Table 1. As in the first version of the manuscript, ΔC_T is not the difference between C_T and C'_T . Furthermore the explanation of C_T and C'_T is given only in lines 384-391, while it is better placed where Table 1 is first mentioned, so in the beginning of section 4.2.

Thanks for these comments. The values in the Table have been corrected and the table and text have been re-ordered to improve the placement and order of the discussion. The captions to figures 2-5 have been reviewed and improved. In addition, a few minor typographical and other errors were removed.

Apart from this, the manuscript is ready. This does not imply that I share all explanations and interpretations, but that is not part of a review as the paper is clear (given that it is very mathematical) and sound. Having different views on explanations and interpretations drives scientific discussions, but does not prohibit a positive review.

We appreciate these comments and look forward to further discussions.

Dear authors,

Thank you for your work and addressing my comments.

I would like to suggest to add something in the text regarding two small questions I had for your original manuscript. The reason I'm mentioning them again is that those points confused me, so I believe they might confuse other readers. I would suggest to add some clarifications/intermediate steps. My two comments were the following:

- I believe BS ends at $z=0+$, could you mention this in the text?

The upper limits in equations (13) and (14) have been changed to $0+$, along with an explanatory note in the text just before equation (13). The location $+0$ has also been mentioned in the last sentence of the penultimate paragraph in Section 2.

- Page 7 (of original manuscript): Can you introduce a couple of temporary steps here, showing first an equation similar to (12), and then showing how the terms are expressed? It is not straightforward to me to see how the term $\int_{-\infty}^{\infty} P dx/dz x dz$ term got manipulated here.

In fact, we have not evaluated the integral at all. We simply equate the last terms on the right-hand sides of (12) and (13), since all remaining terms in those equations are identical. This explanation has been added after equation (13).

I consider these optional and don't want to appear pushy, I just hope they can help other readers.