

Wind Energ. Sci. Discuss., author comment AC2
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Reply on RC2

Carlos Ferreira et al.

Author comment on "Dynamic inflow model for a floating horizontal axis wind turbine in surge motion" by Carlos Ferreira et al., Wind Energ. Sci. Discuss.,
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The authors would like to thank the referee's valuable comments. As a result to answering the reviewers comments, significant changes were done, namely:

1. A more detailed explanation of the equations of the model was added.

2. A new section was added (Section 3.3), where the proposed dynamic inflow model is compared with several other dynamic inflow models, namely the one by Pitt and Peters (1981) as described by Yu (2018), by Øye (1986) as described by Yu (2018), the model by Larsen and Madsen (2013), the model by Yu (2018) (also described by Yu et al. (2019b)) and the model presented in the work of Madsen et al. (2020).

3. A new section was added (Section 3.4), where the proposed dynamic inflow model is compared with with CFD results of the Actuator Disc in surge motion simulated in OpenFOAM, including radial distribution of the induction. The results are also compared with those of the semi-free wake vortex ring model.

Several editorial changes were also done. The answers to each specific comment by the referee #2 are found in the attached file. The revised version of the paper contain a version where the changed text is often printed in blue, except for figures and tables. Many editorial changes are not identified by marking the text blue, as not to overload the text.

We believe all comments have been addressed and the new additional content further proves the relevance of the model and of the work. We hope the referee agrees.

Cordially, Prof. Carlos Ferreira

Please also note the supplement to this comment:

<https://wes.copernicus.org/preprints/wes-2021-34/wes-2021-34-AC2-supplement.pdf>