Wind Energ. Sci. Discuss.,
doi:10.5194/wes-2016-50-AC1, 2017

eawe european academy of wind energy
Open Access WIND ENERGY SCIENCE DISCUSSIONS

Interactive comment on "Methodology for the engineering calculation of flaps on Wind Turbines using BEM codes" *by* Maria Aparicio-Sanchez et al.

Maria Aparicio-Sanchez et al.

maparicio@cener.com

Received and published: 9 February 2017

Thank you very much for your comments; they are very useful for the review of this publication.

I completely agree with you about the main changes that you have proposed. First, the reduction of the redundant figures and equation (I will introduce the changes in the final revision).

Regarding the two-dimensional results that you have suggested to re-calculate, I will modify the figures in the final revision (no important changes have been observed in the main trends of the figures - the conclusions are the same). I would like to explain a

little bit some of the doubts included in your comments:

- The deficiency functions used for the unsteady calculation are similar to the unsteady calculations observed in FAST (the Jones' functions). I will introduce this information in the document.
- We have not included an usual vortex core model. We have limited the region where the vortex presents effect (in these cases, the chord distance). From that turning point the effect is approximated by a linear distribution (tangent at that point, figure attached). This model has been selected after the comparison of different tests with respect to CFD results.
- The time it takes the vorticity to be trailed is neglected (the vortex strength is updated every time step with the final value of the adjacent circulations)-unsteady of dynamic wake is neglected. However, the effect of the unsteady Cl has not been neglected in the calculations.
- The results obtained with CFD and vortex code are extracted from the AVATAR Project, so we will ask if it is possible to include the name of the codes used in the results.

The changes related to references and the missed details of the computations will be also solved.

Interactive comment on Wind Energ. Sci. Discuss., doi:10.5194/wes-2016-50, 2016.

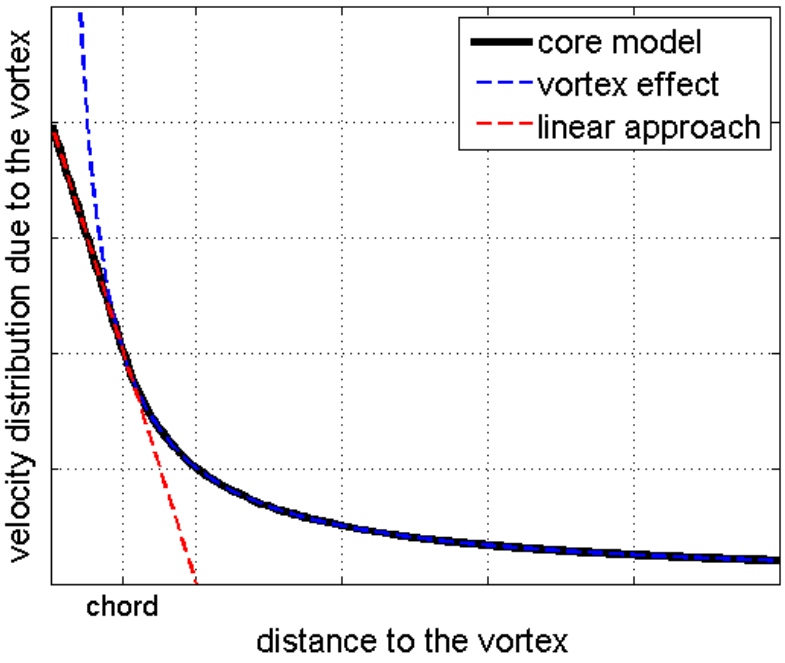
core model
vortex effect
linear approach
velocity distribution due to the vortex
chord
distance to the vortex

Fig. 1.