

## ***Interactive comment on “Multi-fidelity Fluid-Structure Interaction Analysis of a Membrane Blade Concept in non-rotating, uniform flow condition” by M. Saeedi et al.***

**Anonymous Referee #3**

Received and published: 6 June 2016

General Comments: The paper has presented a new concept for designing a wind turbine blade. The authors have done a very interesting research and presented the interesting results of numerical simulations on the semi-flexible blade in the non-rotating case. The paper fits for the scope of the journal and I would recommend acceptance of this paper. However I would have some recommendation to improve the quality of the paper.

Specific comments:

Generally how do you avoid or reduce the vibration on the membrane structure induced by vortex shedding? And how does this vibration affect on the aerodynamic performance and the structural loading on the blade and the stability of the blade struc-

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ture? Please check the style of how to citing the reference to see if using the year of the publication in the round bracket is the right format? Normally, the [] bracket should be used for citing the reference.

Figure 1. "Anylsis" should be "Analysis"

Page 5, line 7 please give the information of the CPU which has been used for these two approaches (FSI\_CFD and FSI\_Panel).

Page 6, In section 2.1.1, You could include more details to show how the non-matching mesh mapping algorithm works.

Page 6, the section 2.1.2 can be shorted by just put the reference to eliminate some of the equations about the point source and point doublet, etc.

Page 10, line 20: "interaction" should be "interactions"

Page 16, line 8, It is not very clear to me what are you going to say here in this sentence. "For FSI\_CFD case the deformation of the blade, which as applied to the blade patch is diffused into the fluid domain."

Page 16, line 5, Here should be a typo mistake "us" -> "is". Otherwise, I don't understand what is the meaning of the sentence.

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