Thanks for the detailed comments. They were very helpful and helped me address the concerns of the previous reviewers a bit better. I know it's a tough read. It's been a very tough topic for me to communicate the ideas properly even in person. There are some subtle ideas in machine learning that have large implications for us in wind energy but I would need a paper double the length to make the point in full. I hope this manifestation of the paper now works.

Overall:

The paper overall seems to be missing a bit of a roadmap (both overall and within individual sections). It reads now as somewhat ad hoc and taking a trial and error approach rather than being systematic and purposeful in the approach. The overall justification and motivation for the whole study seems buried in the conclusions and should be brought front and center. See my notes on lines 443 to 452.

Through out the paper. I have added significantly more signposting and tried to explain the context of the paper in a few more places. In addition to the specific comments here. I re-read the entire paper and added many clarifications. While the content hasn't changed, I feel that this version should do a much better job of explaining the content.

Introduction section 1

In the first section, the discussion and overview of stall and the literature is quite well done as is the introduction to the machine learning methodology. However, the paper then abruptly transitions into the data, methods and analysis. Given this, it is not surprising the reviewers critiqued the lack of explanation around choice of data selection, confusion about selection of model fidelities, etc… the rest of the paper following section 1 seems to come out of nowhere. Consider adding a subsection and/or paragraph at the end of section 1 that:

- At a high level describes what you will do in the rest of the paper - what do you plan to do in a concrete way?

- Provides basic rationale for taking this approach (one cannot do everything in a single paper so it is okay to say that you are choosing x,y,z approach as an illustration of a more generalizable approach, etc)

- Gives an overview of what the rest of the paper will do section by section

There is a new paragraph in the first section that lists the aims of the paper i.e. each of the models and also provides context that the paper is aiming to demonstrate machine learning methods as a viable tool.

Experimental Section 2

Line 15-19 – paper jumps into technical details without proper motivation. Why do we care? See comment on line 24 – how do we use these models? What is meant by viable? Why do we want the models to be better?

I added an extra sentence to this paragraph stating : and this matters for designing wind turbines and experimental data. Viable has been clarified. Justification of better models

Line 20 - In text mention of Stangfeld still incorrect (should be Strangfeld)

I am being haunted by LaTex. It should be fixed now. Really….

Müller-Vahl, H., Strangfeld, C., Nayeri, C. N., and Paschereit, C. O.: Control of Thick Airfoil, Deep Dynamic Stall Using Steady Blowing, AIAA Journal, 53, 1–34, http://arc.aiaa.org/doi/abs/10.2514/1.J053090, 2015.

Line 24 – what do you mean by viable? Computationally efficient? Convergent?

Clarified.

Line 26 – for terms, do you mean definitions used within the literature for stall?

Modified the sentence

Line 92 – incomplete sentence after semicolon

Fixed

Line 128-129 – sentence incomplete

I could not find what you meant, I re-read this paragraph a dozen times.

Line 149-150 – syntax error in sentence

Fixed

Lines 156-159 – introduction to experimental data is abrupt and weak – why this data? Can you motivate its selection somehow?

I introduced the data section.

Experimental Section 3

General comments: Again a small introduction here that lays the roadmap of the section and ties the elements together upfront (here is what im going to tell you) would help. Generally, the section is very dense with text and uses a lot of terminology that is unfamiliar to the wind domain. A few more images could go a long way. Figure 8 is a good start but more could be done.

New paragraph added for context. I went through the sections and tried to add more plain language sentences to clarify in between. I haven't added figures, I hope that the additional explanations is enough. I am resisting on this point because my paper is already quite long and the costs are accumulating rapidly.

Line 245 – behavior

Changed to behaviour.

Line 262-266 – important context, would be worth bringing up front a bit more and repeating here as necessary

There was a mention of this point albeit briefly. I added more detail to emphasis the point.

Treating stall as a stochastic process is a relatively recent idea. As early as 1978, one sees acknowledgment that stall is variable in literature such as \citet{Stall}; an experimental report that described it taking measurements of 50 cycles of a pitching airfoil undergoing dynamic stall to ensure convergence of the lift. ***While these researchers did acknowledge the variability of the data, they still used a simple average to represent the data. This was a reasonable choice at the time given that many of the more advanced tools now available did not exist nor was the requisite computational power available.*** *Only more recently have researchers have begun to address the spatial and temporal variability of stall in experimental work. \citet{Mulleners2013} were able to show that dynamic stall could be described by two stages of a shear layer instability, and that the development of these instabilities varied across cycles. In light stall, it was shown that the trailing edge separation region had two modes, resulting in either a Von Karman shedding pattern or a stable dead water zone \citep{Mulleners2016}. The separation pattern fluctuates unreliably and when vorticity is present, the vortex convection speed is also variable.*

Results Section 4

Consider adding a paragraph in front of section 4.1 to motivate section 4 overall – right now it seems to be a presentation of results without context or critical analysis. It reads more as a demo of the methods. Perhaps results is the wrong title for this section

Yes it was intended more of a demonstration of the methods. I have emphasised this and renamed the section. Examples.

Line 327 – can you be more descriptive at all about a number of test configurations (describe them before jumping into them).

I have added some extra sentences and split the two cases. I have made the lessons learned from each case a bit clearer hopefully

Section 4.1 – consider elaborating on purpose: what are you achieving here? What is the purpose of demonstrating the patterns?

Added some lesson learnt sentences: tldr: Averages suck, there are better ways of extracting information from data.

Section 4.2 – motivate stronger

Added arguments here. Almost labouring the point.

Line 341 / Line 368 – strengthen these sentences significantly. Why does this matter? Give more concrete justification and or application context

Section 5

Line 370 – consider qualifying outliers… outliers that may corrupt the quality of the dataset. Add For instance in front of wind tunnels to explicitly link the sentences together

Changed

Line 381 – 384 – this paragraph seems to be key to why this paper matters… can you speak more to this both up front and in the results and analysis sections?

Added two sentences to emphasis this point.

Second half of section 5 – it gets a bit lost between what here is new work versus what you are extracting from the thesis of Steenbuck. The section also ends abruptly.

I added paragraph at the end and changed the reference to steenbucks thesis.

Section 6 Conclusions

Line 428 – syntax error, missing “to”

Fixed

Context in 416-444 is the type of material that should be in the introduction and not buried in the conclusions

Consider eliminating lines 443 to 452. Providing a specific recipe for a multi-fidelity machine-learning driven approach to modeling aerodynamics accounting for stall has pitfalls that I think the reviewers have already highlighted. Just speaking to the fact that machine learning driven models, like the ones presented in this paper, can be used in tandem with models of varying levels of fidelity and data sets to build robust and computationally unsteady aerodynamic models is feasible. This paper presents first steps towards enabling such an approach by applying machine learning techniques to learn complex and dynamic stall behavior from a large set of test data.

I haved changed the conclusion so that the new potential model is in it’s on section. I retained the exact recipe because it still makes an important point about hierarchies of data. I have highlighted this explicitly in the text now.