General comments:

Research objectives: "The goal of this work is to investigate the floaters responses at different load cases." Is a bit vague as a research objective. The design limits that where checked for should be more clearly highlighted.

As the authors stated this works is somewhat lacking of experimental validation, that will be performed in a following stage of the work. The very high wind excitation, around the floater's natural frequencies is acknowledged by the authors but the explanation of this phenomena can be improved. To address this, and also to benchmark the performance of the novel floater concepts, I would suggest to compare the response of the ActiFloat concept to the reference U-Maine floater design for the IEA 15MW made available by C. Allent et al. "Definition of the UMaine VolturnUS-S Reference Platform Developed for the IEA Wind 15-Megawatt Offshore Reference Wind Turbine". This would also allow for one to see how a more "standard" design fares in a site with mild sea conditions.

Results: A critical interpretation of the results shown would greatly help to illustrate advantages and disadvantages of the proposed concepts. Also the readability of this section would improve if the layout is changed, there are often more than 2 pages between figures and the point in the text where they are referenced.

Specific Comments:

Section 2.2: Please include the number and range of frequencies for which the potential flow problem is solved or reference to document where they can be found. This can be quite useful as a guideline for readers attempting to model similar systems.

Line 120: Hub-height is lower than IEA 15MW nominal value (150m). This has obvious benefits on stability as it lower COG and point of thrust application but may increase blade fatigue due to increased wind shear. Was this evaluated during design?

Although in the WindCrete concept tower and platform are a unique piece on concrete, these are modelled in OpenFAST as a flexible tower and rigid platform correct? Is this assumption reasonable? Please clarify.

Line 165: The way the active ballast system is implemented in OpenFAST is unclear. Is the floater's CG changed according to the values in table 6 based on the mean wind speed of the simulation?

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Line 200: The loadcases used represent a standard set for verification. However when verifying "open" designs many authors include more extensive datasets that are often based on international standards (see Allen et al. Definition of the UMaine VolturnUS-S Reference Platform Developed for the IEA Wind 15-Megawatt Offshore Reference Wind Turbine). Please justify the choice of the loadcases in the present study.

FIGURES 3 & 4: For the surge decay of the windcrete and pitch decay of the activefloat concepts there seems to be a low-frequency component superimposed to the natural response frequency. What would be the cause of such phenomenon?

Line 240: What are the initial conditions in the model? Why weren't initial conditions imposed to be equal to the mean value reached during the simulation to shorten initial transients? I am afraid that results in regular waves may be quite inaccurate with such large initial transients compared to "stady state" response.

Figures 6&7: I am afraid that the initial transients will have a non-neglegible impacto on the PSDs shown.

Line 248, Figure 8: Pitch-surge couplings will be observed if the motion of the FOWT is not plotted with respect to it's istantaneous center of rotation. Decoupling these two DOFs is therefore only possible if motion is shown with respect to it's center of rotation. I believe that showing the motion with respect to the COG only introduces more confusion.

Lines 255-260: I think this part could be rephrased to improve clarity. The first time I read this section it seemed to me that the authors were implying some sort of connection between forcing introduced by QTFs and that introduced by Morrison Drag, which is not the case.

Line 263: "the Activefloat active ballast system is now activated to keep the mean static pitch of the platform around zero" could you clarify what this means? See previous comments.

Line 268: "In Figure 11, the frequency response shows a surge, pitch coupling." Can you explain this better?

Line 272: This is interesting. Wind is often thought of as a damping force. The fact that a NTM spectrum excites the platform's natural frequencies seems worrying to me. Can this be mitigated with controller tuning?

Conclusions: Impact and significance of this work should be highlighted more clearly. For instance the dominant wind-driven excitation of natural frequency observed with this large-thrust rotor is not well highlighted. Also a discussion on how this issue can be mitigated should be provided. Some of the statements in the conclusions, such as "For the Gran Canaria site with mild wave loads, the motion responses were dominated by low frequency forces, at the natural frequencies of the floaters." should also be stated in the results. This would provide this section with some much needed interpretation and not only description of what is shown in the plots.