The authors' work aims at providing more reliable data for the analysis of offshore wind resources – a generally very welcoming undertaking. Likewise is the attempt of making more – and better – use of reanalysis data for that purpose also highly appreciated.

However, as always when using model output, validating the results is a necessary but many times difficult process. The lack of sufficient in-situ measurements of offshore wind speeds makes this an especially challenging task.

Now, how do the authors tackle this problem? The manuscript is kind of a mixed bag. I did not identify any technical errors – that's good news. But the nature of the manuscript is very descriptive, consisting mainly of 'naked' results of comparison/deviations of the different data sets. This is in part due to the fact that before making thorough meteorological analyses the data have to be spread out and subjected to a first statistical analysis. Here, I acknowledge the authors' achievement of providing a lot of data for comparisons of a few offshore wind measurements with results of most of the available reanalysis models. This is indeed a bulk of work and – to my knowledge – has not been done before that extensively. So, the first step has been made. The other side of the coin is a substantial lack of interpretation/analysis of the results with respect to the physical processes determining these results. This however is necessary in order to make use of the authors' results in a more generalised manner.

So, in the end my recommendation is to accept the paper as it is having in mind that the work presents a very good basis for further investigations but is still incomplete. The authors are encouraged to proceed to the next stage of interpreting the results and provide meteorological explanations to the partially very large discrepancies between measurements and modelling results. This is what the scientific community requires.

The authors are extremely appreciative of your time spent in reviewing our manuscript and providing feedback. We agree with your assessment of what the work discussed in this paper is intended to be: a quantification of model errors in two areas of relevant offshore wind development potential and identification of meteorological conditions leading to large model error. The sources of error in reanalysis models could vary due to different model grid resolution, vertical extrapolation errors due to Monin-Obukhov similarity theory, appropriate choice of climate models in various reanalysis, planetary boundary layer schemes chosen within each model, and different data assimilation data types in each reanalysis. Therefore, it is rather a grand challenge to decipher some of these compounding effects on reanalysis model errors when compared to observations. We have added some additional text in the current version of the manuscript providing additional justification to the results, where possible.

The recommended further investigations to interpret the results on a deeper level and use them to improve models are a part of our current research efforts. These approaches are being taken from a modeling standpoint, exploring the improvement of accuracy provided by higher resolution models that better capture meteorological phenomena, coupled wind-wave models, and the selection of appropriate planetary boundary layer schemes.

We have performed similar stages of research using the lidar buoys on the U.S. Atlantic coast (quantification/identification of model errors followed by a deeper investigation to try and understand/improve such discrepancies). We invite the reviewer to check out the deeper investigation we provided for the Atlantic analysis to gain a preview of our ongoing research efforts in the Pacific:

Gaudet, B.J., García Medina, G., Krishnamurthy, R., Shaw, W. J., Sheridan, L. M., Yang, Z., Newsom, R. K., and Pekour, M., Evaluation of coupled wind / wave model simulations of offshore winds in the Mid-Atlantic Bight using lidar-equipped buoys, Monthly Weather Review, 150, 6, 1377-1395, https://doi.org/10.1175/MWR-D-21-0166.1, 2022.