## **Overall comments:**

In the current manuscript, the authors have compared the performance of four entirely different tracking scheme using high-resolution ERA5 reanalysis data compared to the observations (IBTrACS). In addition, they have implemented a common criterion in all the tracking schemes to remove extra-tropical storms in the detected tropical cyclone detections to reduce the False Alarm rates. The paper is very interesting and well written by accurately identifying the gap in the current literature that model projections on TC characteristics are sensitive to the underlying tracking scheme. This novel study on identifying pros and cons of different tracking schemes can help us to accurately choose one better tracking scheme or combination of tracking schemes that can help to improve the certainty of future climate model projections on TC characteristics. Although, the paper does not directly involve modelling, it gives a new method/idea in analyzing the future modelling results related to extreme weather events (Tropical cyclones) that is important for global numerical modelling community, policy makers and risk assessment companies.

All the methods and assumptions are clear and clearly outlined in the manuscript. The results are sufficient to support the interpretations and conclusions. In addition, they can also check whether different tracking schemes can capture the interannual changes in the TC frequency due to ENSO. The study also sufficiently compared/contrasted with earlier studies and clearly indicated their novel contribution to the paper. Overall, the presentation of the manuscript and supplementary sections are clear with sufficient information about the codes to reproduce the results.

## **Detailed comments:**

Abstract is missing the research problem of the article. Please include the goal of your research work in the abstract.

Paragraph 15 is not clear. Needs to explain the conclusion here more clearly. Does the author mean that we need to select one or a combination of few trackers with better performance and average the result.?

Also, in the paragraph 75 the word "we used" has been used frequently, please reduce the usage of that. Also, in the entire draft we find the word "we used" is repeated. Instead use "we employed", "we utilized".

At paragraph 40, you have mentioned that physics-based trackers embed a wind threshold. Please be precise here which wind threshold do you mean? I guess it should be 10m winds.

At the paragraph 45, mention that OWZ **tracker** was found to produce better results across a wide range of resolutions instead of just OWZ.

At line 70, Dulac et al., ? year is not mentioned here.

In the paragraph 130, the following sentence is not clear: Nevertheless, it has recently been assessed as having similar performances for a range of metrics (Zarzycki et al., 2021; Roberts et al., 2020a).

Coming to the methods section on TC trackers: It would be good to provide a table describing different tracker input variables, main idea of the design of the tracking scheme, spatial and temporal resolution requirements of the tracker variables, etc.

In the description of the post treatment methods, where you have used two different methods and only focus mainly on the STJ method in the entire manuscript. So, I suggest maybe you can keep the detailed description explaining the VTU method in the supplementary section.

In the Discussion section, you have introduced Venn diagrams concept. I suggest you to give some details about how to build the Venn diagrams in the methods section.