Dear Editor,

We are pleased to inform you that we considered all your suggestions and major changes have been performed, the manuscript has been shorted, and extensive grammar improvements were conducted.

Please find below our point-to-point answers.

Public justification (visible to the public if the article is accepted and published):
A major revision is needed.
1. The manuscript stills suffered numerical grammar errors/typos despite two rounds of revision. Here are just some of the examples (line numbers are for the revised version with track changes) (I raised a similar comment last time, and but numerical grammar errors remain).
page 10, line 224: "P considerable departures" --> "P considerably departure"
page 10, line 225, "In contrast" --> "In contrast, "
page 10, lines 240-241: there are two sentences.
page 11, line 296, "for decoupled cases however"
page 11, line 299: "are even strongly negative correlation"
page 16, line 337: "in the seaice"
page 17, line 354: "suffers of"
Please thoroughly check the manuscript and fixes all grammar errors.

Answer 1: The whole manuscript was reviewed, and grammar errors corrected. We performed substantially improvements regarding the writing and presentation of the manuscript.

2. Section 3.2 is not well designed and performed. For a short period as short as 14 years, many of the detailed trend analysis and results are not conclusive and add little to the literatures. For example, The authors attempt to fit cyclical climate periods—such as the 10.8-year Pacific Decadal Oscillation (PDO) and 5.4-year El Niño Southern Oscillation (ENSO) harmonics—to a dataset that is only 14 years long. Suggest to significantly shorten Section 3.2.

Answer 2: The mixed-phase cloud properties comprise of 14 years of observations. The cyclical climate periods for ENSO, PDO, and AO -used in our study- were calculated over several decades of data for those climate indexes, and the values obtained are in agreement with the extensive literature (Appendix D). Moreover, for consistency we performed two methods for trend estimation, and every trend estimation is dependent on the length of the time series. As the first long-term, multi-sensor synergistic study of this kind, we definitely consider that the manuscript does add to the scientific literature. It is well know by the scientific community that every statistical analysis is not conclusive but

depends on the statistical sample and needs to be interpreted as such, that is why we make the effort to compute trends using two different methods, unlike many studies that only use one methods.

3. The discussion section and the summary: The discussion is overly long, and part of it is somewhat redundant with the summary. suggest to shorten Section 3.3 and Section 4 and then combine them as one single section of "Discussion and Summary".

Answer 3: We merged Section 3.3 and Section 4 into a single section as suggested “4 Discussion and Summary”. Furthermore, the section was extensively shorten and redundant information reduced.

4. The overall writing of the manuscript needs substantial improvement. Some of the description of statistical parameters are difficult to follow. For example, it is still not clear to me how the median absolute deviation (MAD) is defined (line 239).

Answer 4: The overall manuscript’s grammar and redaction were improved and shorten accordingly. From the first manuscript’s draft the median absolute deviation (MAD) was clearly defined in the very same line 239, Section 3 “Results”, (now in lines 203-204).