We would like to acknowledge again the reviewers for their valuable feedback and constructive criticism on this second version of our manuscript. We have done are best to take into account the suggestions and concerns raised by the reviewers and we have made some substantial modifications to improve the scientific quality of our study. Additionally, we have made conscientious efforts to rectify and refine various aspects of our manuscript. We are confident that these revisions have markedly improved the scientific quality and overall value of our paper. Below are point-by-point answers to the main concerns raised by the reviewers.

1) Anonymous referee #1 :

The paper reconstructs tracks of past major derecho events over France and examines prevailing environmental conditions in terms of geopotential height anomalies, 2-m temperature, total precipitation, wind fields, CAPE and shear using ERA5 reanalysis. Based on the obtained event set, analogues in the meteorological fields were estimated as 29-day mean fields for two 30-year periods. The authors attribute changes in the meteorological fields as climate change signals. For most of the events studied, the authors found increased precipitation and temperature, while geopotential height remained largely unchanged. They also examined the possible influence of natural climate variability on these changes, based on ENSO, AMO, and other large-scale teleconnections and parameters.

The authors have done a great job by more or less completely revising the paper. They have taken all of my major revision points into consideration and implemented them in a very satisfying way. This is highly appreciated. In particular, the increase in sample size, the expansion of the event catalog, and the use of convection-related parameters such as geopotential height, CAPE, or vertical wind shear have significantly improved the scientific quality. It also addresses my major concerns about the usefulness of the paper for other researchers.

There are still several issues that need to be addressed before the paper can be accepted for publication. However, these issues can be considered minor revisions. See the list of minor revisions and changes below.

General:

1) Why is the time frame limited to May through August? As shown in Fig. 3, July and August have the highest number of derechos, so one can assume that September is also relevant here (in line with the analysis of lightning data from other studies).

We appreciate the reviewer's suggestion to consider the month of September. We subsequently checked for events in September and found 4 more to include. We also used data from nearby weather stations (from NOAA's Integrated Surface Database (ISD)) in other countries to improve our detection process and the estimation of the intensity of the derechos. After going through the detection process again, we identified more events, bringing the total to 38 (all seasons combined), which is nine more than in the previous version of our study.

2) There are still several flaws in the English writing (see the long list of Edits), and I'd again suggest to consult a native speaker or a proofreading service to improve the writing (e.g. consistent use of tempus, the "s" in the third person singular, use of definite and indefinite articles). In addition, some sentences are very long and complicated, with several subordinate clauses on different topics, which makes reading and understanding very difficult.

We appreciate the reviewer's feedback in identifying grammatical errors and awkward phrasings. We have made dedicated efforts to correct these issues, as well as to rephrase paragraphs and sentences to enhance overall clarity.

3) Once an acronym or abbreviation is defined, it should be used throughout the manuscript.

We thank the reviewer for reporting this issue. We have checked the consistent use of abbreviations.

4) Use NHESS terminology: date is day month year (e.g., 20 July 2020); units must be abbreviated in conjunction with numbers (e.g., speed is 10 km h -1 and not 10 km/h).

We appreciate the reviewer for bringing this to our attention. We have revised the format of dates and units to align with the specified requirements.

Minor revision points:

1. Condense the first five lines of the abstract as it is very general. More important is the recapitulation of the main points of the article.

2. L9: Specify what you mean by “changes in synoptic conditions”, e.g., by adding “considering two different time periods”

3. L15-17: I’d suggest deleting this sentence in the abstract

4. L68: “typically produces heatwave or stormy conditions”; this is very unspecific and somehow a contraction. Also, “stormy” is not appropriate for convection

5. Whole paragraph L60-75: This is a nice example highlighting the relevance of derechos and the question of climate change. However, I suggest moving this part to the beginning of the introduction (and shortening this part a bit) before defining derechos and discussing the influences of climate change.

6. L89: Do you have a reference for the stated decrease in relative humidity? Is this also true for CMIP6 data? I know that the older CMIPs show such a decrease in the mid-latitudes. European soundings I looked at a few years ago showed no change in relative humidity.

Here are some references that support the claim of a decrease in relative humidity from observations or reanalyses :

Taszarek, M., Allen, J. T., Brooks, H. E., Pilguj, N., & Czernecki, B. (2021). Differing Trends in United States and European Severe Thunderstorm Environments in a Warming Climate. *Bulletin of the American Meteorological Society*, *102*(2), E296–E322. https://doi.org/10.1175/BAMS-D-20-0004.1

Pilguj, N., Taszarek, M., Allen, J. T., & Hoogewind, K. A. (2022). Are trends in convective parameters over the United States and Europe consistent between reanalyses and observations? *Journal of Climate*, 1–52. https://doi.org/10.1175/jcli-d-21-0135.1
However, we do not know about any references supporting these results in CMIP6 models.

7. L132-133: “are difficult to disentangle from the associated synoptic-scale winds” This is not really an issue if one simply considers the horizontal pressure gradient.

While it is accurate that synoptic-scale wind can be approximated using the horizontal pressure gradient, our focus is on local wind gust measurements. These gusts represent fluctuations that may diverge considerably from the average wind speed estimated from the relatively low-resolution synoptic-scale pressure field provided by ERA5.

8. L148: “The reports can come from weather stations”; here you are referring to ESWD, which does not include weather station data.

ESWD actually includes some data from weather stations. The corresponding reports thus feature the recorded wind speed which is useful to assess derecho intensity.

9. Sect. 2.2: Specify the version of CAPE you used here: mixed-layer CAPE, surface-based CAPE, most unstable CAPE? Wind shear is defined as z, thus the unit is s -1 ; I assume you use wind vector difference as a proxy for shear in this study.

We thank the reviewer for pointing this lack of precision. We consider the most unstable CAPE from ERA5. We indeed compute vertical wind shear as the wind vector difference between 500 hPa and 10 m. However this metric is usually (improperly) referred to as “0-6 km bulk wind shear” or “deep layer shear”. We have clarified these details in the manuscript.

10. L165-166: The sentence “The method ensures that comparisons are relevant ..” is unclear

11. L174: A geostrophic flow requires a linear geopotential, which is not the case here.

12. L177: Fronts are not per se sub-synoptic events

13. L184-185: I’m a bit confused here: are the 2-m temperature and daily precipitation totals really from ERA5 data as stated here, or from EOBS as stated in L195?

We use both ERA5 and EOBS for 2-m temperature and daily cumulative rainfall, in order to compare data from reanalysis and observation. In practice the results are almost always compatible but we present only the results of EOBS for these variables in Table 2.

14. L198: Why 30 years? Both periods are 31 years.

We thank the reviewer for reporting this mistake.

15. L210: Here you may cite Piper et al. “Investigation of the temporal variability of thunderstorms in central and western Europe and the relation to large-scale flow and teleconnection patterns”, who investigated the relation between thunderstorm occurrence and NOA, SCAND, and EA patterns.

We thank the reviewer for this relevant suggestion, we have included this reference in the text.

16. L230: Why do you calculate a linear trend for the entire period when you previously stated that the first period is only marginally affected by climate change?

In a previous paper, [Faranda, D., Messori, G., Jezequel, A., Vrac, M., & Yiou, P. (2023). Atmospheric circulation compounds anthropogenic warming and impacts of climate extremes in Europe. *Proceedings of the National Academy of Sciences*, *120*(13), e2214525120. https://doi.org/10.1073/pnas.2214525120] we found no significant difference in fitting linear and cubic trends, which motivates this choice in the present study.

17. L267: Considering the first and the last report to define the length of a derecho introduces an undefinable level of uncertainty. What about regions and times with significant underreporting? Can you somehow estimate the associated effect? At least a statement about the resulting uncertainty is needed. Also, what is the uncertainty of assuming straight lines for the tracks instead of somehow curved tracks?

The reviewer has brought up a crucial concern regarding our methodology in defining derecho tracks. In response, we have incorporated a brief discussion addressing the limitations of this methodology in the manuscript.

18. Tables always have a heading and not a caption.

We thank the reviewer for reporting this issue, we put the heading and short caption on top (a short table caption is authorized in the submission guidelines of WCD).

19. L288-292: What are the reasons for the different hot spots? You can compare this map with lightning data or just speculate. I'd also suggest that identifying four hot spots from a sample of 29 events is not a very robust result. Similarly, how do you explain the diurnal cycle (L310)?

It is true that considering the small sample size, it is risky to identify clear hotspots, we have subsequently changed our phrasing to be more descriptive and less assertive in the revised version of the manuscript.

20. Figure 3: The color bar for the time does not make sense as all reports have the same time.

We have included reports from another dataset (ISD, from NOAA) which features weather station data from other countries. Thus we now have reports in Austria and Czech Republic for the 2022 event. Thus we think it makes more sense now to use a colormap for reports'timestamps.

21. Figure 4 and following: I guess it's a problem with Latex that the figures are shown after the literature section? I would split Figure 4 into three different figures: one with a-p, one with q-w, and the last with t and x. This would make the discussion much easier.

We have taken into account the suggestions of both reviewers and split Figure 4 in 4 new figures for better readability. The figure is also displayed at a more relevant place in the main text, which was caused by a Latex issue.

22. In the figure caption, change sea level pressure to geopotential height. The subfigures of Figures 5 and 6 should have the same aspect ratio as that of Figure 4. Also, the captions of Figures 5 and 6 should read "Same as Figures 4a-d, but for...".

We thank the reviewer for reporting these mistakes, we have fixed them.

23. L306: You should also mention the ESWD reports here.

We thank the reviewer for the suggestion, we have now mentionned ESWD.

24. Last paragraph of the conclusions: You may want to phrase new perspectives and outlook in a more affirmative/positive way.

We appreciate the reviewer for bringing this to our attention. We have revised the entire conclusion, including the final section, to present future prospects in a more positive light.

Edits:

We thank the reviewer for reporting all these issues. We have done our best to take them into account and improve our manuscript.

1. I highly acknowledge the restructuring of the result section and the focus on the main results. However, I doubt whether an appendix of 91 is really helpful. Besides, almost none of the figures in the appendix are discussed in the manuscript, which is not appropriate.
2. Check the brackets in the citations; very frequently \citet{} is used instead of \citep{}; e.g., L42, L113, L116-118, L172, L286, L315-316, L390, L394
3. The terms “high-end” and “low-end” intensity are unclear and not appropriate here. It implies that you refer to both ends of a statistical distribution function rather than to a rough estimation.
4. Be consistent in the use of units; better m s -1 instead of m/s
5. L2 there ✉ their; “…and threaten infrastructure”
6. L9 delete “In the second part..” (or otherwise include before “In the first part…”)
7. L10: encoded is not an appropriate expression
8. L11: include “…distant past period…”; past ✉ period
9. L13: include “vertical wind shear” (in contrast to horizontal wind shear)
10. L20: “damaging winds related to downbursts” (it’s not the downburst with vertical wind component but rather the horizontal wind that produce the damage)
11. L22: “feature predominantly linear characteristics, but also include several bow echoes representing the regions of highest wind speeds” or something like this to resolve the contradiction of “linear characteristics” and “bow echoes”
12. L24: delete “on radar display”
13. L27: “include a rear-inflow…”
14. L28: “…wave pattern () oriented embedded within” there’s either something mission or you should delete “oriented”
15. L28: “occurs”
16. L30: “typically move”
17. L37: reformulate such as “…there must be no more than 3 hours between two consecutive severe wind gust reports….”
18. L39: “emanates”
19. L44: there “…there are at least…”
20. L46: derechos
21. L52: “America (USA), …”
22. L57: “In particular, to our knowledge, there is no previous work…”
23. L60: “the public was surprised by”
24. L61: “The associated MCS…”

25. L69 (see also comment 6): “downburst leading to horizontal wind speeds near the surface of up to 225 km h -1 ”; in the original sentence, it reads as if the downburst has that wind speed
26. L72: “…(with anomalies in SST of…”
27. L76: mesoscale convective events ✉ MCS
28. L85: write out CAPE and refer later on CAPE solely
29. L88: delete “midlatitudes and”
30. L89: reformulate “…which makes difficult any statement about the frequency of severe thunderstorms difficult…”
31. L90: “results concerning changes in the …”
32. L93: “and to analyze…”
33. L95: deleted “convective available potential energy”
34. L96: “…and to introduce…”
35. L98/99: put Section before 2.1 and 2.2
36. L103: use USA only
37. L110: either “a…gust” ore “reporting gusts” if in plural38.
38. L111: “We then filter out the days that do not have a concentrated area of wind gust reports.”
39. L112: to what does “they” refer to?
40. L112: “…there are likely not…” do you mean they?
41. L113: includes
42. L116: Unclear what you mean by “It”; I think there is a dot missing before Feng et al.?
43. L120: MCSs (Plural)
44. L125: from ✉ since
45. L128: systems
46. L129: “have a global coverage” ✉ “cover large areas”; as you know, single geostationary satellites used for storm detections cover only parts of the globe. So this statement is misleading.
47. L135: mesoscale convective system ✉ MCS; emanates
48. L137: have ✉ has; “… define as a derecho as a…”
49. L141: MCSs
50. L145: “…tracks extend” Plural
51. L147: lightning (plural does not exist)
52. L149: doesn’t ✉ do not (plural)
53. L150: …”gust speed. This is also a limitation of our study,…”
54. L154-155: consider reformulation such as “…the former provide the general setting for convection-favoring conditions in a specific region.”
55. L157: “To investigate this” to what refers this?
56. L157: we examined
57. L158: CAPE was already defined
58. L162: climate change started earlier, so “marginally affected” is not appropriate. Besides, “human activity” is too general, better say “greenhouse gas emissions”
59. L164 “long-term annual or multiannual natural variability”
60. L160-165: a brief discussion about how DLS, CAPE, and Z500 are relevant for convection would be appropriate

    We have included a short discussion to justify the use of CAPE, DLS and Z500 in our study.

61. L165: “attributed to the climate change signal.” (otherwise you should specify the signal)
62. L170: delete “when warming was much more limited” as this occurs several times
63. L175-176: “…which can drive extreme events such as MCS associated with derechos.

64. L178: delete "…and the release of latent CAPE" (btw: it's latent energy or CAPE, but not latent CAPE).
65. L190: large-scale dynamics
66. L198: "We divide the datasets into two periods…" this is now stated for the 4 th time…
67. L202: delete this sentence
68. L214: unclear what is meant by "the event itself is suppressed."
69. L229: plural p-values and H-test results
70. L247-248: this sentence is a bit cumbersome
71. L260: human activity ✉ climate change (note that "human activity" has a very broad meaning).
72. L275: "…seen in Figures…"
73. L278: France have ✉ France has
74. L298: in Figure 2
75. L302-303: reformulate "one might obtain upgraded intensities"
76. L307: lower ✉ less
77. L326: an MCS
78. L333: include Figure 479.
79. L334: I'd suggest to refer to the geopotential instead of low and high pressure (strictly spoken: your geopotential chart is on the same pressure level of 500 hPa, so there are no high and low pressure systems detectable).
80. L336: "…which is one is the…"
81. Entire Sects. 3.2 and 3.3: correct is "increase/decrease in" and not "of" or "on"
82. L338: sea surface temperature ✉ SST
83. L340 for the EOBS
84. L342: on 18 August
85. L343-344: "As for deep layer shear 6, we find no significant signal along the path of the MCS". It is unclear to what you refer to as shear was not discussed yet. Besides, to which Figure do you refer?
86. L350 are statistically not significant
87. L351: "() similar to SCAND () suggesting"
88. L373: "in on average"
89. L376: same as comment 79
90. L380: I do not understand what you mean by "Apart one event for each no good analogue can be found"
91. L388: "… and we observe…"
92. L389: "almost half of the casese…"
93. L400: what is meant by "More some patterns…"?
94. L412: "… and the proportion…
95. L414: use plural: MCSs …tend
96. L420-421: New sentence: "Further investigations are necessary…and the effect of anthropogenic …"
97. L440: Is that statement necessary? For me it seems to be redundant given the paragraph above.
98. L445: solely SST
99. L449-452: Consider reformulating this sentence as it is very cumbersome.

2) Anonymous referee #2 :

In this revision, the authors have changed their focus to 500-hPa geopotential heights and included analysis of CAPE and 0-6 km shear, and they have also increased their attention to factors of internal variability that could be responsible for changes in the environments associated with derecho events. Results that in the previous version were stated as certain are now (appropriately) softened to include more discussion of potential uncertainty.

Unfortunately, while the manuscript is an improvement, in this closer read I do feel as though the scientific quality of this research still feels half-baked; most of my concerns can be summed up by reading through the conclusions and wondering why many of these approaches weren't taken in the first place.

MAJOR COMMENTS

1. There are still some major grammatical errors that hinder understanding of the paper. I've tried to highlight a few of the more difficult examples where they come up, as well as some of the minor translation issues. I recommend a more careful read of any future drafts.

We thank the reviewer for pointing out many errors or unclear sentences. We have thoroughly corrected them and checked the quality of our writing.

2. There are several very minor differences that likely disappear in the noise of this relatively small dataset that are nonetheless reported as significant, namely the 1-hr shift in the afternoon peak in French derechos compared to German derechos (Lines 310-311) and the July/August peak in France versus a July peak in Germany and the USA (Lines 315-316).

We thank the reviewer for pointing the limitations due to the small sample size of the dataset. We have conducted statistical tests to assess the significance of the differences between the two datasets and indeed we cannot claim significant differences. Thus, we have more carefully commented these differences and highlighted this issue.

3. There are several instances in the paper where a rigorous result could not be found with the current dataset/methodology and then a reasonable alternative to that approach is brought up immediately, which seriously undercuts the results as presented here. Rather than appearing as future work, these solutions feel like natural steps that should have been taken in the current study. Why is radar/lightning/SYNOP data not included in this analysis? Why are SCAND results not shown when it's one of only two indices showing a significant difference between the times considered?

We recognize that the limitations of our paper have raised concerns. In response, we have expanded our dataset by incorporating weather stations from NOAA's Integrated Surface Database (ISD), which provides synoptic observations, to complement Météo-France, DWD, and ESWD data. However, it's important to note that wind gust data may not be uniformly available in every country, such as Italy, and the time coverage is not always consistent.
In the revised version of our manuscript, we have also considered the month of September to identify potential derechos occurring during this period, given the relatively high activity in August. Through this additional analysis, we have identified 9 more events, including 4 in September, bringing the total to 38 events.
We did not incorporate radar and lightning data mainly due to difficulties in accessing the data and time constraints. We believe our approach is still valuable for an initial exploration of derechos in France, and that it represents a significant contribution to science on severe convective storms in

Europe. Radar and lightning datasets could enhance future studies, refining specific aspects of derechos outlined in our research. We have elaborated on the value of our contribution and provided justifications for our choices in the manuscript.

4. A relatively minor major comment, but whenever p-values are reported, it should be in the context of a predetermined threshold (e.g., significance at the p = 0.05 level) rather than as comparative values for each plot.

We consider changes to be statistically significant when the p-value is less than 0.05, as specified in the text. In the subfigure titles, we not only present the p-value but also indicate the test result as 'H=0' when the null hypothesis, suggesting that the two empirical distributions originate from the same intrinsic distribution, is valid, and 'H=1' when the two distributions differ significantly. We have emphasized this clarification in both the text and the caption of Figure 6.

5. The plots showing comparisons between the 2022 derecho event environment and the mean environments for the two 30-year time periods are not especially helpful and potentially quite misleading, as the smoothing over the 30-year averages will generally always look less “severe” than the environment of the 2022 derecho event.

We appreciate the reviewer's suggestion. In response to input from both reviewers, we have divided Figure 4 into four new figures (Figures 4, 5, 6, and 7) to enhance clarity and readability. Below are answers to some comments.

MINOR COMMENTS

Below are answers to some of the minor comments raised by the reviewer.

Line 3: You don’t need to focus on the US for a full sentence in your abstract. Consider removing “particularly” onward and add: “Although less frequent than in the USA, derechos also occur in Europe.”

Lines 7-8: This feels like introduction material: your abstract should be mostly for summarizing results. “more similar” how? You can summarize all this info in one sentence: “Compared to derechos in Germany, derechos in France are more frequent in August and have a higher proportion of short-lived, relatively low-intensity events.”

Line 13: “inconsistent changes” - inconsistent with what?

Line 14: “These changes” - what changes? In derechos? In general?

Line 33: “convective wind-gusts nature” - what does this mean?

Lines 47-48: Briefly explain (in a few words) how they are different

We have added a short explanation about the difference between progressive and serial derechos.

Lines 73-74: How do you justify “very likely” here?

Line 75: Why do you specify convective winds here?

Lines 75-77: I'm not sure I would characterize severe convective storms as "scarce", if that's what you're suggesting here.

Line 88: "midlatitudes and Europe" - these aren't mutually exclusive categories. Is this meant to be midlatitudes in general and Europe in particular?

Lines 100-101: I can't parse the meaning of this description of section 2.2

Lines 111-113: How widespread do you allow the wind reports to be? One of the defining features of a derecho is its substantial horizontal extent (at least along one axis). How do your criteria compare to those of Gatzen et al. (2020)? Why not just use the same criteria?

Indeed we use the same criteria of a long axis of at least 400 km just like Gatzen et al. (2020). We have reworked the Methods section for the detection part to improve clarity.

Lines 115-118: Citations are inconsistent in formatting throughout the paper and should be standardized according to WCD guidelines

We thank the reviewer for reporting this issue. We have fixed the citation formatting.

Lines 118-127: It is unclear to me how this tracking algorithm based on brightness temperature and precip is being incorporated with the wind reports?

We have clarified the use of the tracking algorithm in the revised manuscript. In short, our usage of the algorithm is two-fold :
- detect the existence of an MCS for days when a concentrated are of wind gust reports is found.
- check that the reports match with the detected structure in time and space along a distance greater than 400 km

Lines 136-140: I can't parse the meaning of this sentence.

We acknowledge this sentence was awkward. We have reworked the whole paragraph.

Line 142: Does this mean that you needed at least two reports to be 400 km apart? How does that mesh with Lines 111-112?

In practice, we necessitate a concentrated area, implicitly signifying more than two wind gust reports. We introduced a more precise criterion by imposing the condition that wind gust reports must be within 200 km of each other, with no more than a 3-hour interval between successive reports, following a methodology akin to that of Coniglio and Stensrud (2004).

Lines 148-150: This sentence needs to be revised for clarity.

Line 154: "the former are typical recurrent…" is a poorly constructed sentence and should be revised

Line 164: Should explain here (briefly) how you plan to exclude this low-frequency variability

Line 165: "The method" - which method?

Line 166: How does this method differ from what you consider "statistical modeling techniques"? Some would argue that an analogue approach fits that description.

Lines 167-169: There's a couple conflicting (?) ideas in this sentence that make it difficult to parse.

Line 176: Not sure what is meant by "MCS outbreak" - an MCS may result in severe weather outbreaks, but you wouldn't see an outbreak of MCSs

Lines 192-194: A citation or two for further information on these limitations would be helpful

We added two citations to support these limitations.

Lines 269-270: I assume these categories are mutually exclusive? Should specify; as written, they are not.

Lines 279-281: This statement is unclear and hard to parse

Lines 292-295: This sentence needs to be reworked for clarity

Lines 295-297, 302-303: Why didn't this study include station data from these other countries?

We have incorporated station data from ISD into our analysis. Although this dataset offers international coverage, it may not be as precise and comprehensive as datasets from national weather services (NWS). However, obtaining data from NWS can be challenging and time-consuming due to administrative processes, which were constraints during the revision period. Despite these limitations, the inclusion of ISD enhances the value of our study as an initial exploration of derechos in France. Future studies can build upon our work by utilizing additional datasets to further refine the analysis.

Lines 308-311: Is this difference of 1 hr at all meaningful statistically?

We refer the reviewer to the answer to Major Comment #3.

Lines 315-316: The number of events considered is so small that I don't think you can argue a meaningful difference here.

Figure 3: I cannot interpret this figure at all - what does the colourbar refer to? The arrow is all one colour, as are the icons for reports.

The colorbar refers to the timestamp of the wind gust reports, as explained in the caption. Given the few number of reports, all of them appeared almost in the same color. With the addition of reports from ISD, we now can see reports with different time stamp, as depicted by the different colors from blue to red.

Lines 336-338: This sentence is awkwardly formulated and should be revised for clarity.

Figure 4: The caption is very difficult to follow and should be organized differently

We refer the reviewer to the our response to Major Comment #5.

Line 349: Again, is this shift meaningful enough to note with the small sample size?

Lines 350-352: If SCAND is one of only two statistically significant indices, why is it not shown here?

Lines 358-368: Is “significant” defined here as at the p=0.05 level?

Yes, we refer the reviewer to the answer to Major Comment #4.

Lines 369-378: I think any conclusions drawn here come across as rather speculative and a bit of a stretch given the limitations of the methods and the datasets.

We thank the reviewer for this feedback. We have discarded or reworked some parts that were probably too speculative.

Line 382: The lack of punctuation at the start makes this sentence very difficult to understand

Lines 424-426: If it would have made analysis more rigorous, why didn’t you use radar/lightning/SYNOP data?

We refer the reviewer to our answer to Major Comment #3.

TRIVIAL COMMENTS/TYPOS

We thank the reviewer for reporting all the issues mentioned below. We have done our best to take them into account and improve our manuscript.

Line 2: “their” rather than “there” (x2)

Line 9: “In a second part” - can be removed

Line 26: “move” should be “propagates”

Line 28: “oriented embedded”?

Line 28: “occurs” rather than “occur”

Line 32: “gust” rather than “gusts”

Line 37: “gust” rather than “gusts”

Line 39: “gust reports must emanate” rather than “gusts reports must emanates”

Line 41: “downburst” rather than “downbursts”

Line 44: “when there are at least” rather than “when there at least”

Line 45: See Line 44 comment

Line 52: No “the” before “derechos”

Line 60: “the public opinion was astonished” - still an awkward construction

Lines 67-68: You say two things (“heatwave or stormy conditions”) and then three things (“Eastern Atlantic or Portugal or over Spain”) - which corresponds to which?

Line 74: “of the 2022” rather than “of 2022”

Line 78: “much strong” should be “many strong”

Line 79: “we find” should be “the authors find”

Line 87: “MCS tend” rather than “MCS tends” (often we use “MCSs” when pluralizing “MCS”, as awkward as that looks!)

Lines 95, 158: You have already defined CAPE and can just use the acronym.

Line 99: “derecho events” rather than “derechos events”

Line 103: No need to define USA here

Line 103: Should give the date again of the 2022 derecho

Line 107: “Derecho detection” rather than “Derechos detection”

Line 110: “wind gust” rather than “wind gusts”

Line 111: “wind gust” rather than “wind gusts”

Line 112: “they are” rather than “there are”

Line 112: “insufficient” rather than “unsufficient”

Line 113: “also include” rather than “also includes”

Line 135: “gusts emanate” rather than “gusts emanates”

Line 136: “gust reports” rather than “gust report”

Line 137: “has some” rather than “have some”

Line 137: “as a swath” rather than “a swath”

Line 141: “gust report” rather than “gusts reports”

Line 145: “extends into” rather than “extends in”

Line 147: “lightning” rather than “lightnings”

Line 170: “height fields at 500 hPa (Z500) to fields from” rather than “height patterns at 500 hPa (Z500) fields to fields from”

Line 171: “that is” rather than “which is”

Line 174: “that is” rather than “which is”

Line 175: “that control environmental conditions that” rather than “that controls environmental conditions which”

Lines 178-179: “latent CAPE” is redundant - just “CAPE” is fine here

Line 184: “2-meter” rather than “2-meters”

Line 191: “this dataset allows us to avoid” rather than “this datasets allows us to avoid”

Line 195: “2-meter” rather than “2-meters”

Lines 204-205: You have already defined ENSO and NAO and can use their acronyms here

Line 223: 3.4 in ENSO refers to the region, not the version

Line 226: “significant” rather than “significance”?

Line 249: Typo: “of the of persistence”

Line 265: “wind gust” rather than “wind gusts”

Line 269: “wind gust reports above thresholds: if there are” rather than “wind gusts reports above thresolds: if there”

Line 278: “each cell” rather than “each cells”

Line 278: “the northeast of France has the highest” rather than “northeast of France have the highest”

Line 279: “no events” rather than “no event”

Lines 281-283: Don’t need to start this sentence with “However”; “1.9 events per year for equal-sized grid cells” rather than “1.9 event per year for equal size grid cell”

Line 288: “and propagates” rather than “and move”

Line 298: “in Figure” rather than “on Figure”

Line 301: “and a larger” rather than “and larger”

Line 302: “weather station” rather than “weather stations”

Line 307: Seem to be missing words between “results” and “that”

Line 310: “late afternoon” rather than “end in the afternoon”

Line 319: “Germany or” rather than “Germany of”

Figure 2: In caption, “wind gusts speed” should be “wind gust speed”

Figure 3: In caption, “rectangle” should be “rectangles”

Line 336: Typo: “which is one is”

Line 342: “observed on” rather than “observed in”

Line 343: The “6” can be removed here.

Line 371: “translate to” rather than “translates in”

Line 373: “on average” rather than “in average”

Line 376: Word missing after “southwesterly”

Line 387: “a significant” rather than “an significant”

Line 398: comma splice and “an” instead of “and” - there are many minor errors throughout the rest of the paragraph and section

Line 406: “wind gust” rather than “wind gusts”

Line 412: missing words

Line 414: “tend to” rather than “tends to”

Line 424: “gust reports” rather than “gusts reports”

Line 439: I don’t think “dispose of” is the phrase you want here