
GENERAL COMMENTS

“A climatological characterization of North Atlantic winter jet streaks and their extremes”

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We thank both reviewers for their thoughtful and positive assessment of the study, and whose comments we happily incorporated into the revised manuscript.

Specifically, we thank Andrew Winters for his concrete and constructive comments and overall positive assessment of the study. Major comments concerned the jet streak tracking algorithm, where Winters asked us to consider expanding the scope of the algorithm and explain other methodological choices in more detail. The suggestion to discuss the statistical significance of results was the second important point of this review.

We also thank the second anonymous Reviewer for their constructive comments, especially on making the manuscript more accessible to broader parts of the atmospheric science community, and for their nuanced comments regarding the clustering methods. In response to both reviewers, we conducted the following main changes:

- We revised the introduction to include more generally accessible literature.
- We included a simple schematic of the four-quadrant model of jet streaks in the introduction.
- We revised the method section to
 - better explain some choices made in the development of the jet streak tracking algorithm
 - elaborate more on the chosen clustering methods, specifically justifying the use of SOM clustering and the number of degrees of freedom concerning the regimes of the eddy-driven jet.
- We have expanded the isentropic range to include 310 – 360 K and reran all our analysis based on the resulting wind and PV fields.
- To assess the statistical significance of the results, we conducted bootstrap analysis on the intensities of different jet streak subsets, Frame regime frequencies, as well as jet streak centered composites. We included the results of those additional analysis in the revised version of the manuscript.

We hope the additional context provided in the method section makes it easier for prospect readers to assess its adequacy for answering our, and possibly other, research questions. We also addressed all the minor comments and responded to them line-by-line. We included our changes in the responses documents for each reviewer. We hope to have addressed all the helpful comments sufficiently and look forward to the referees' assessment of the revision.

REFERENCES