

Type of the Paper (Abstract)

A Two-Dimensional Study of Block Onset Locations Using a One-Dimensional Index and GIS

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Abstract: Previous climatologies of blocking from this group using a one-dimensional index showed that in the Northern Hemisphere, blocking onsets occurred primarily in the Pacific Ocean region, the Eastern Atlantic, and over continental Asia. In the Southern Hemisphere, the western and eastern Pacific are the two active regions for block onset. The development of technologies such as Geographic Information System (GIS) visualization software, have made ingesting data and then rendering it on a map has become easier and faster. This research group has previously not archived the latitude of onset making a comparison of onset locations with 2-D indexes difficult. Now, the onset latitude is provided on the University of Missouri Blocking Archive. This work shows that the blocking onset regions are roughly consistent with those found by 2-D indexes, but there are some key differences based on the differences in the information presented. Here, block onset locations are slightly equatorward and upstream of those presented in 2-D indexes. Additionally, there are some differences in the onset locations for more persistent blocks and stronger blocks versus their less persistent and weaker counterparts.

Keywords: blocking anticyclones; climatology; onset location; Block Intensity; block duration; blocking trends

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Appendix A

The appendix is an optional section that can contain details and data supplemental to the main text—for example, explanations of experimental details that would disrupt the flow of the main text but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data is shown in the main text can be added here if brief, or as Supplementary data. Mathematical proofs of results not central to the paper can be added as an appendix.

Appendix B

All appendix sections must be cited in the main text. In the appendices, Figures, Tables, etc. should be labeled starting with “A” —e.g., Figure A1, Figure A2, etc.

References

References must be numbered in order of appearance in the text (including citations in tables and legends) and listed individually at the end of the manuscript. We recommend preparing the references with a bibliography software package, such as EndNote, ReferenceManager or Zotero to avoid typing mistakes and duplicated references. Include the digital object identifier (DOI) for all references where available.

Citations and references in the Supplementary Materials are permitted provided that they also appear in the reference list here.

In the text, reference numbers should be placed in square brackets [] and placed before the punctuation; for example [1], [1–3] or [1,3]. For embedded citations in the text with pagination, use both parentheses and brackets to indicate the reference number and page numbers; for example [5] (p. 10), or [6] (pp. 101–105).

1. Author 1, A.B.; Author 2, C.D. Title of the article. *Abbreviated Journal Name* **Year**, *Volume*, page range.
2. Author 1, A.; Author 2, B. Title of the chapter. In *Book Title*, 2nd ed.; Editor 1, A., Editor 2, B., Eds.; Publisher: Publisher Location, Country, 2007; Volume 3, pp. 154–196.
3. Author 1, A.; Author 2, B. *Book Title*, 3rd ed.; Publisher: Publisher Location, Country, 2008; pp. 154–196.
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