

Interactive comment on “The 1816 ‘year without a summer’ in an atmospheric reanalysis” by Philip Brohan et al.

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The objective of this paper was to communicate two new discoveries in historical reanalysis:

- 1) Reanalysis of the type pioneered by 20CR has substantial skill in reconstructing weather events even when constrained by only a handful of pressure observations - a combination of targeted data rescue and reanalysis could be used to study a much wider range of problems than previously thought.
- 2) Reanalysis constrained only by surface pressure, combined with the perturbed-model studies used in detection and attribution work, offers a new and powerful way to do weather event attribution.

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These results were surprising to the paper’s authors, and we thought them important, as they have the potential to be widely used.

It is clear that the paper fails in its aims: the reviews show little interest in the methodological advances we describe, and they demand a great deal of additional work on the climate of 1816 - which, while valuable in itself, won’t help communicate the message of the paper.

We won’t publish this in Climate of the Past.

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