

Interactive comment on “Scant evidence for a volcanically forced winter warming over Eurasia following the Krakatau eruption of August 1883” by Lorenzo M. Polvani et al.

Anonymous Referee #1

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The Authors present a case study of the the Krakatau eruption of August 1883 and its impact on wintertime temperatures in the Eurasian region. Compelling evidence from observations and simulations is provided to support the conclusion that the warming in the area following Krakatau was unrelated to the eruption.

The paper is very interesting, well-written and to-the-point, and a pleasure to read. It is well suited for ACP and provides enough new scientific information to justify publication. Overall, the paper presents a nice piece of work.

I have one specific comment. In the Summary/Discussion, the Authors generally note that each eruption is unique, and list some affecting factors. However, the impact of

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these in the presented case is not discussed. This should be done because the Authors are making rather general conclusions based on a single event. I would be particularly interested in some elaboration on the effect of QBO and ENSO, because there are studies that seem to point out their importance for the "stratospheric pathway" and NAO modulation, e.g. for the top-down solar influence. At least, the Authors should state the conditions during the Krakatau eruption and make a comment on the possible implications regarding their conclusions. Also, were these conditions similar during the 1992 Pinatubo eruption? I am looking forward to the Authors' response on this.

Minor corrections:

- a) Page 3, line 77: check the years, 1978 should be 1878.
- b) Page 8, line 240: "uncorrelated correlated" should be "weakly correlated".

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