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*Supplement of*

## **The influence of tropical volcanic eruptions on the climate of South America during the last millennium**

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1 **Supplementary Figure Descriptions**

2 Fig. S1. Number of rain gauges per grid box for selected months (during eruption events)  
3 in the GPCCv6 network. Bottom right panel shows a time-series of the total number of  
4 stations over the range 90° to 30° W and 60°S to 20° N.

5

6 Fig. S2. Zonally averaged latitudinal AOD distribution for all 16 events used in each  
7 ensemble member for DJF. Mean of all curves shown in dark black.

8

9 Fig. S3. As in Figure S2, but for JJA.

10

11 Fig. S4. Precipitation anomaly (mm/day) for each volcanic eruption used in LM  
12 composite (each averaged for the three ensemble members used) during DJF.

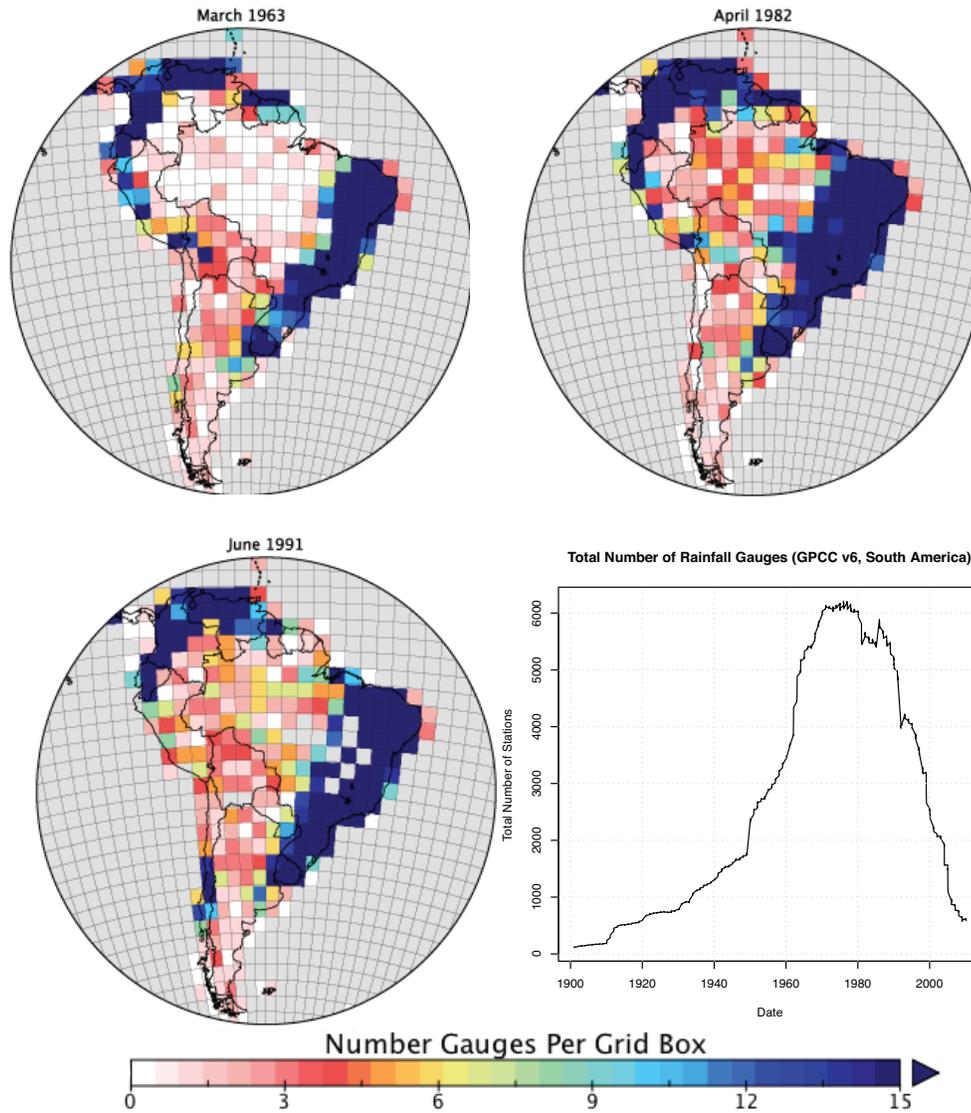
13

14 Fig. S5. As in Figure S4, but for JJA.

15

16 Fig. S6. Global-scale Precipitation Anomaly (mm/day) in the LM composite for **a)** DJF  
17 and **b)** JJA

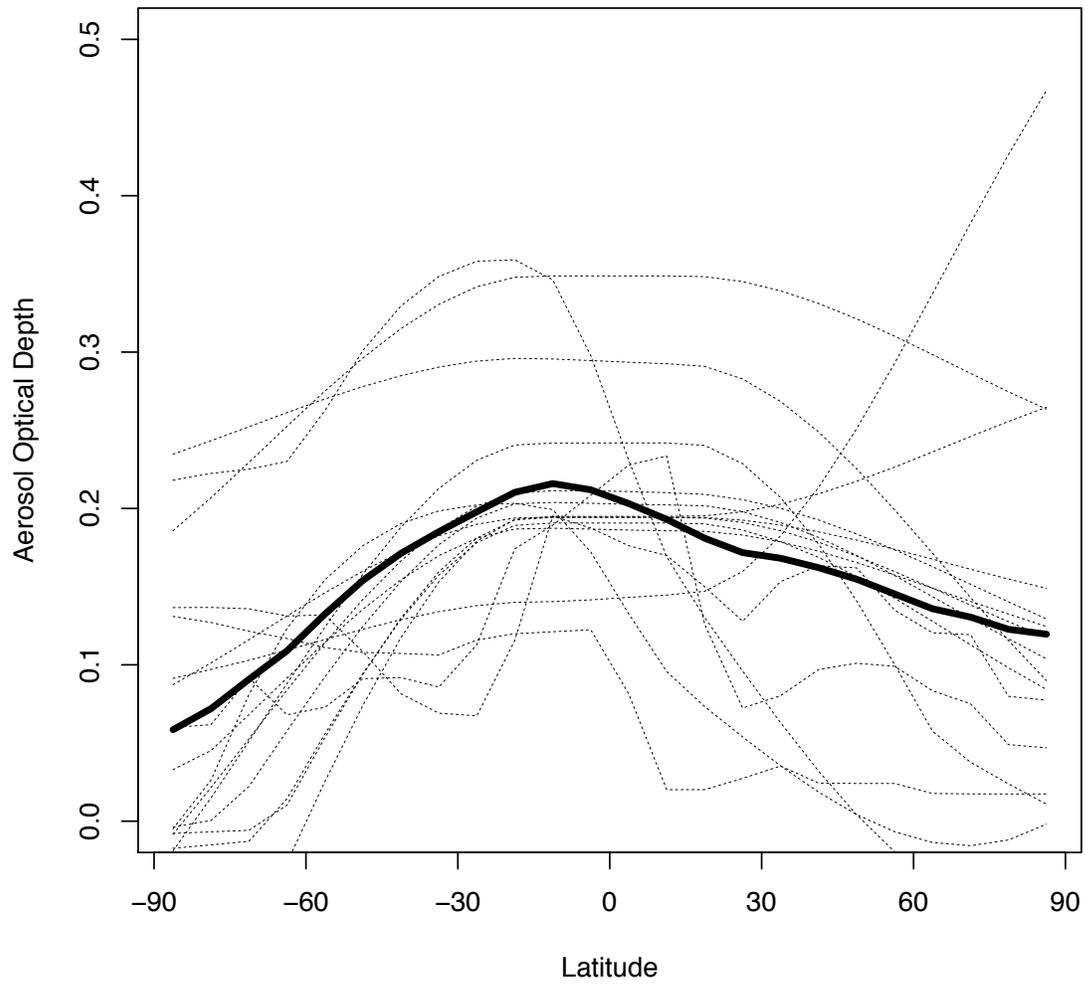
## GPCC Gauge Density



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Fig. S1. Number of rain gauges per grid box for selected months (during eruption events) in the GPCCv6 network. Bottom right panel shows a time-series of the total number of stations over the range 90° to 30° W and 60°S to 20° N.

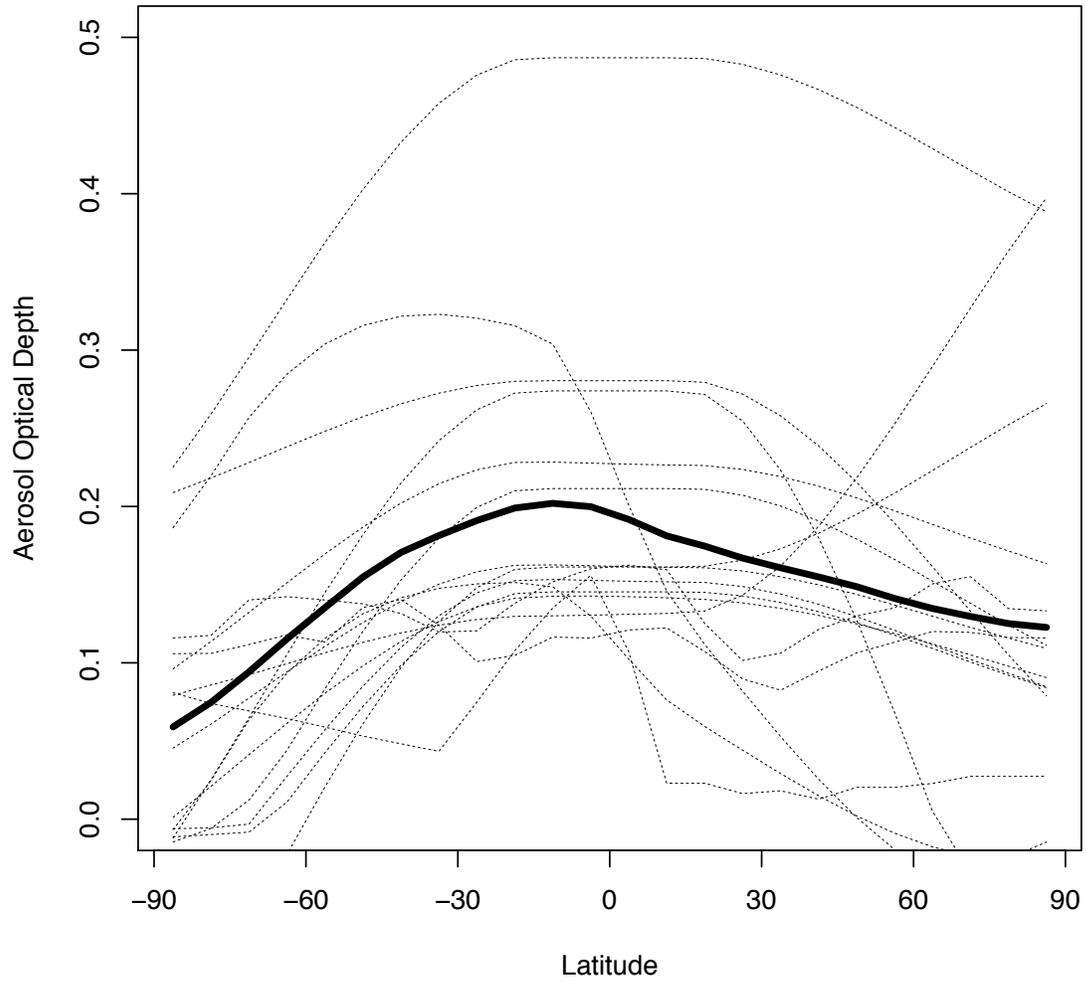
### DJF Aerosol Optical Depth (Events in LM Composite)



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Fig. S2. Zonally averaged latitudinal AOD distribution for all 16 events used in each ensemble member for DJF. Mean of all curves shown in dark black.

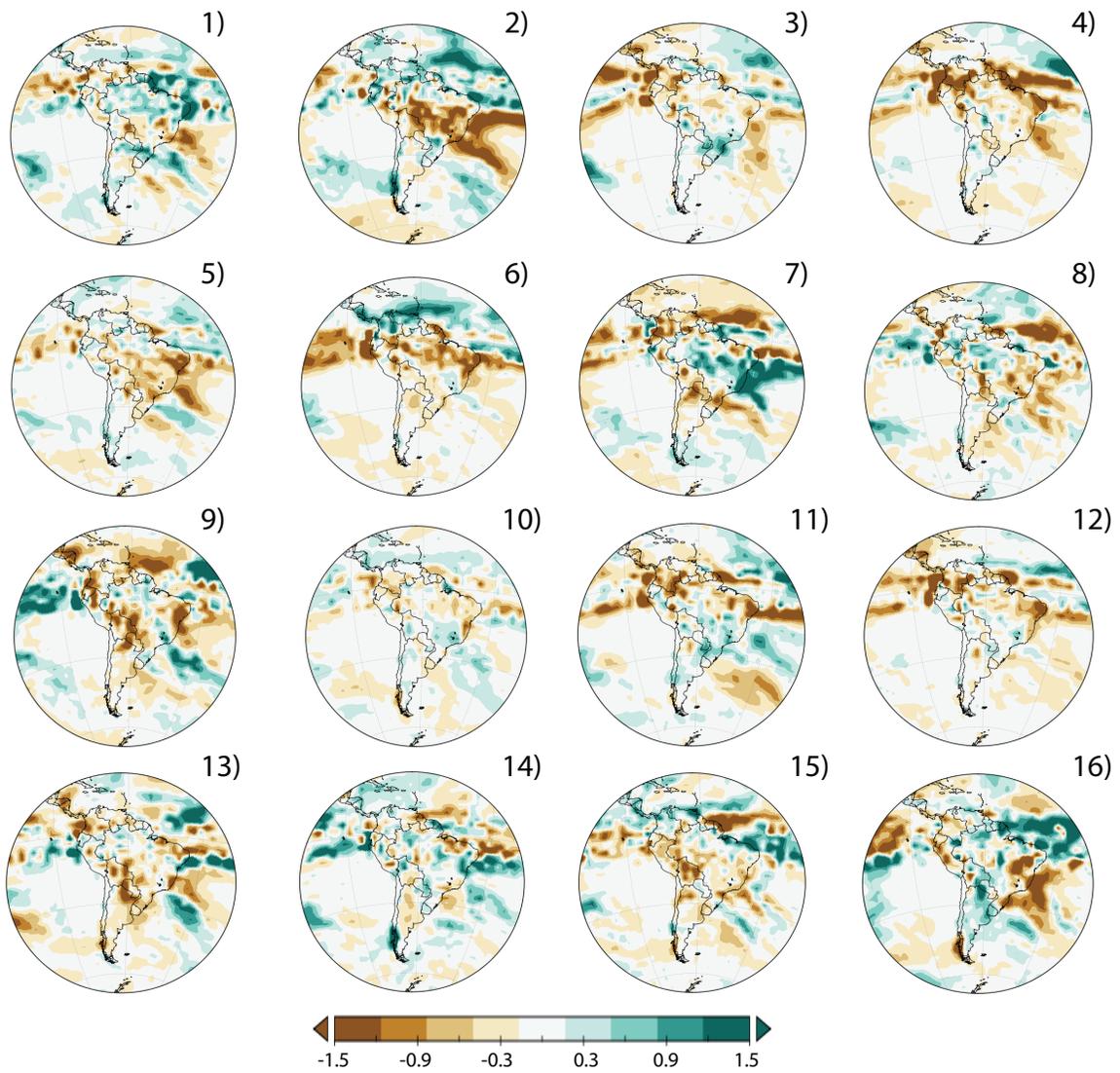
### JJA Aerosol Optical Depth (Events in LM Composite)



27  
28 Fig. S3. As in Figure S2, but for JJA.

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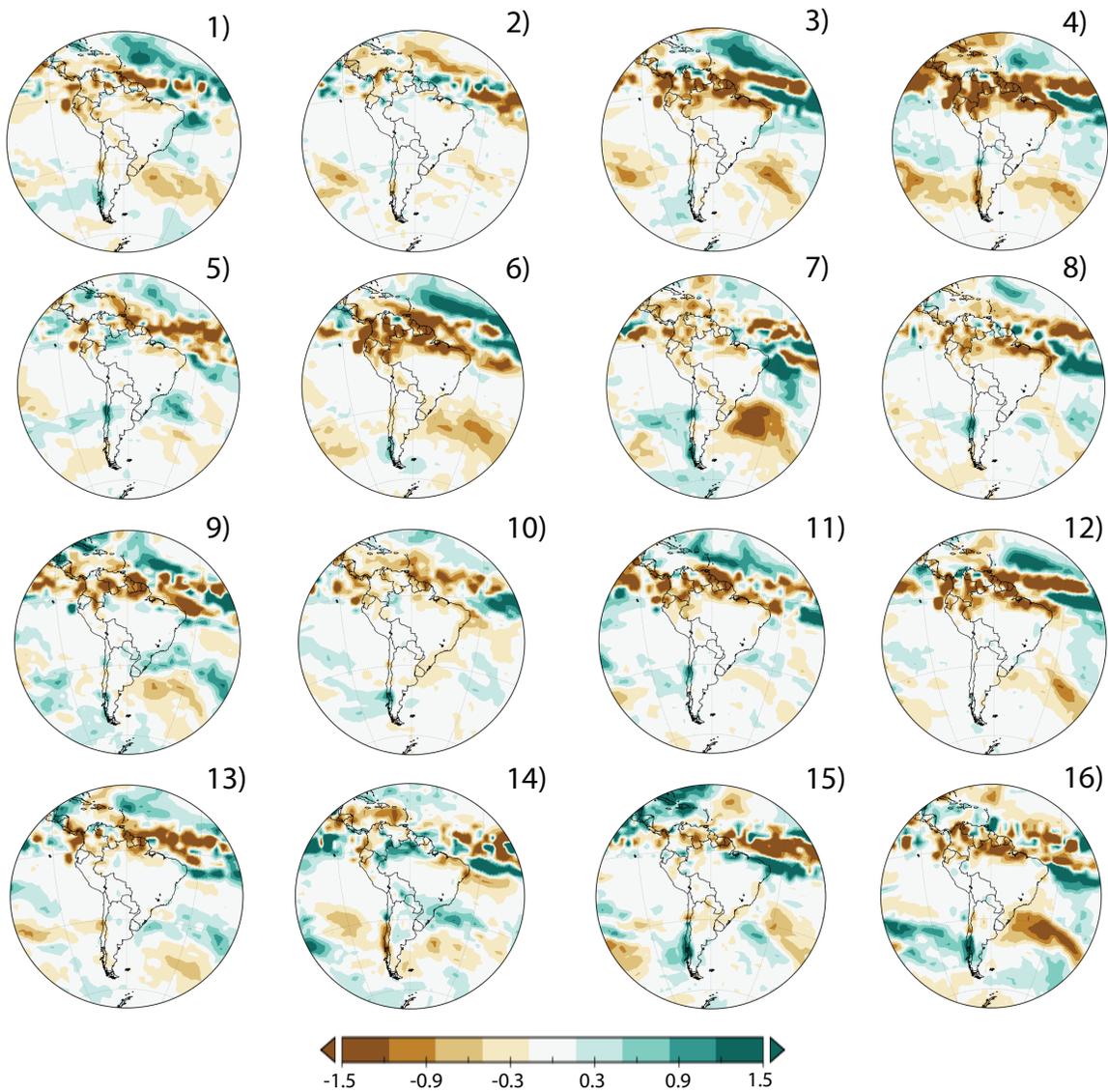
### DJF PRECIPITATION BY EVENT



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Fig. S4. Precipitation anomaly (mm/day) for each volcanic eruption used in LM composite (each averaged for the three ensemble members used) during DJF.

JJA PRECIPITATION BY EVENT

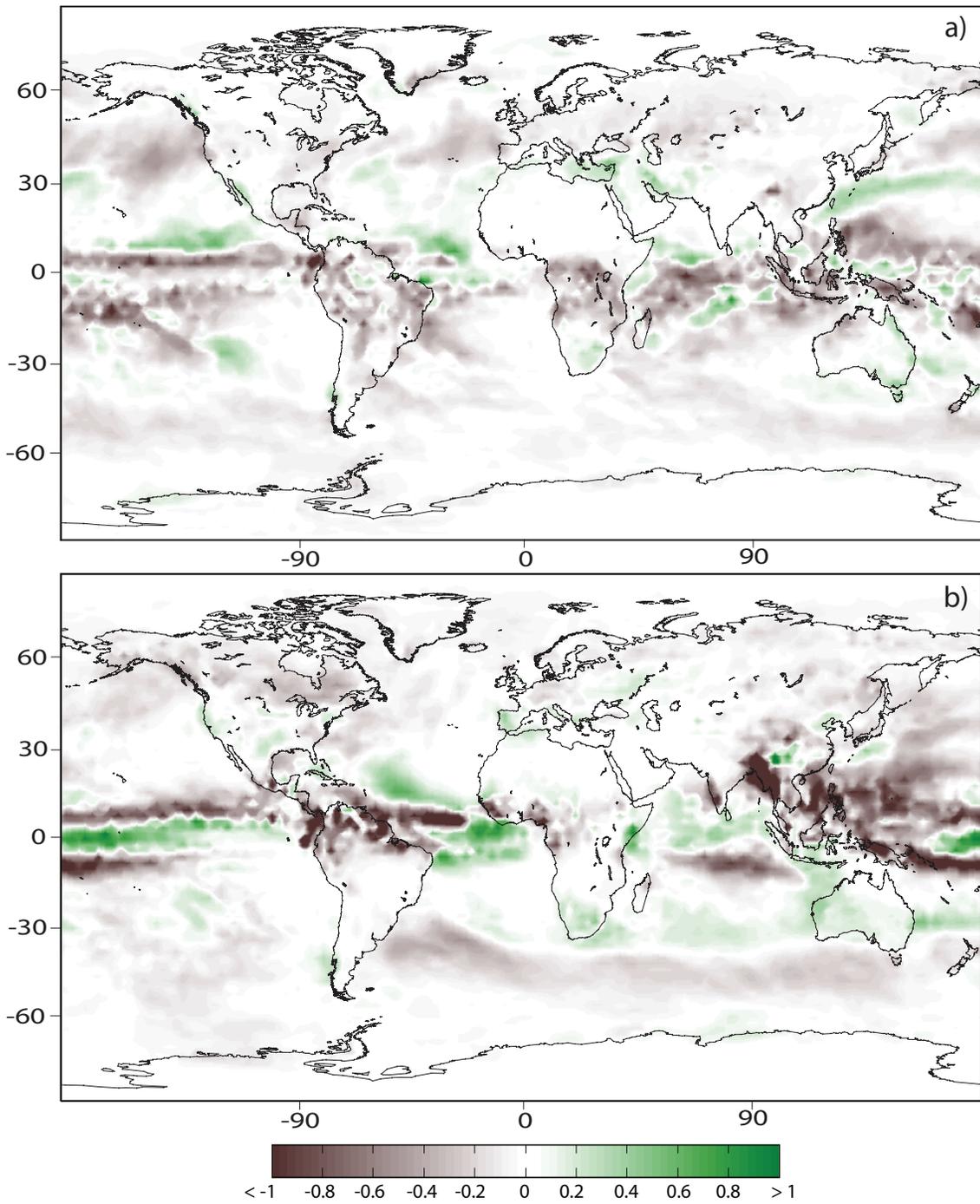


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35 Fig. S5. As in Figure S4, but for JJA.

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Composite (ALL ERUP-GLOBAL) Precipitation



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Fig. S6. Global-scale Precipitation Anomaly (mm/day) in the LM composite for a) DJF and b) JJA