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Supporting Information for

Impacts of the eruption of Mount Pinatubo on surface temperatures and precipitation forecasts with the NASA GEOS subseasonal-to-seasonal system

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Contents of this file

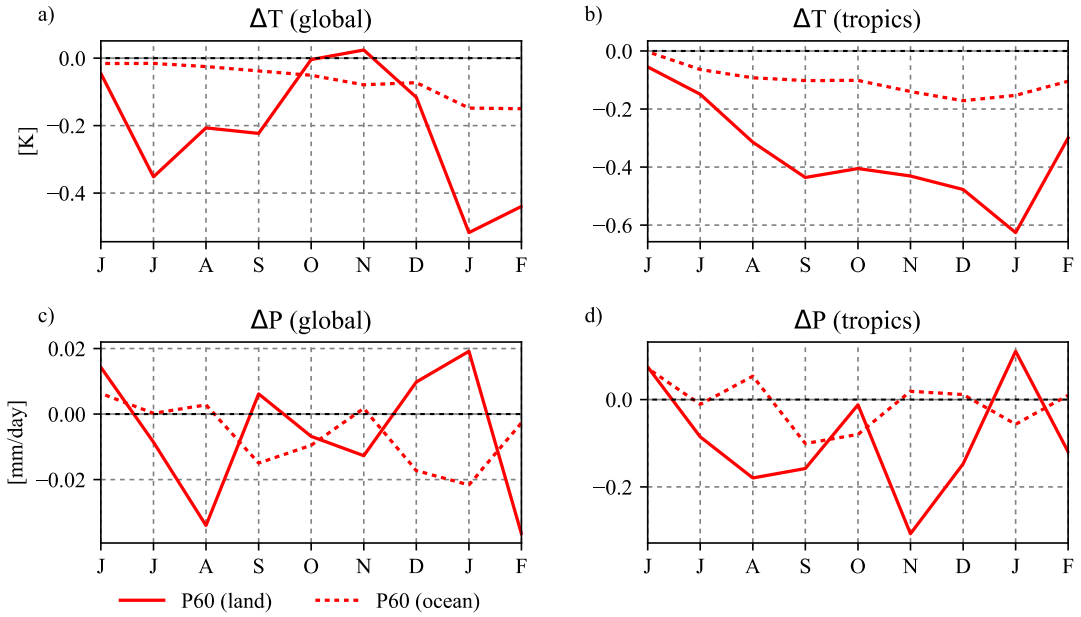

Figure S1: Impact of the volcanic aerosol on global and tropical (20˚S-20˚N) mean surface temperatures (above) and precipitation (below), calculated as the difference between P60 and noP. Each panel shows the average over land (solid) and ocean (dashed).

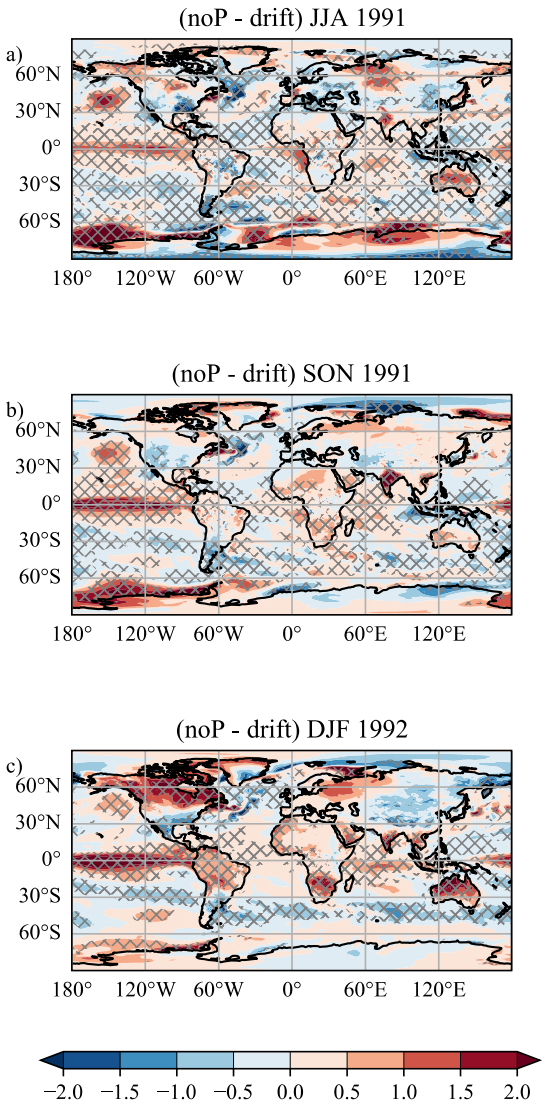

Figure S2: Surface temperature anomaly (in K) of *noP* with respect to the drift (the drift represents climatological conditions). Hashed areas are significant at 95% level.

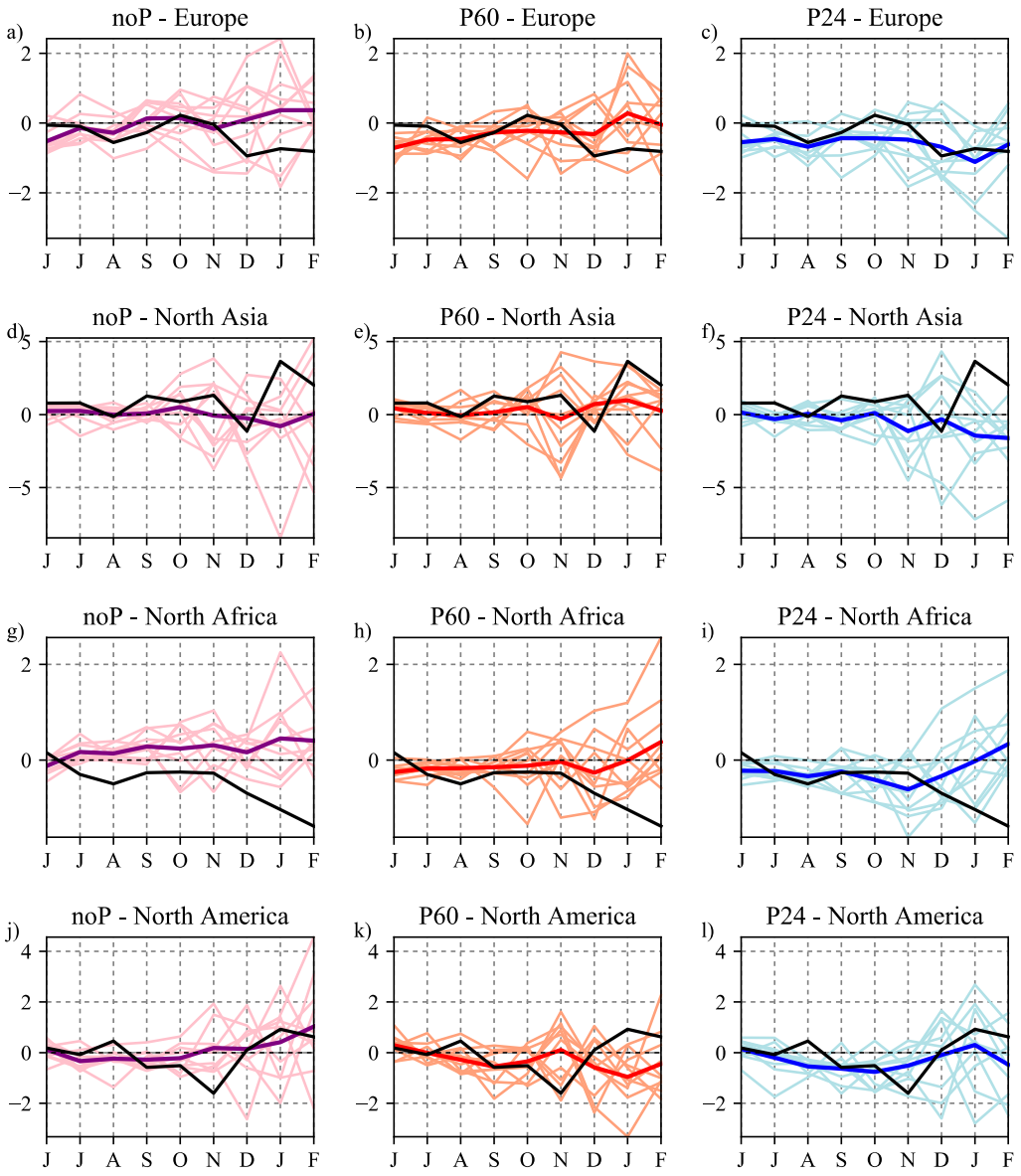

Figure S3: Surface temperature forecasts in noP (left), P60 (middle) and P24 (right) for, from top to bottom, Europe (30˚N-60˚N, 0-60˚E), north-central Asia (40˚N-70˚N, 60˚E-120˚E), northern Africa (0-30˚N, 0-60˚E), and North America (30˚N-60˚N, 120˚W-60˚W)

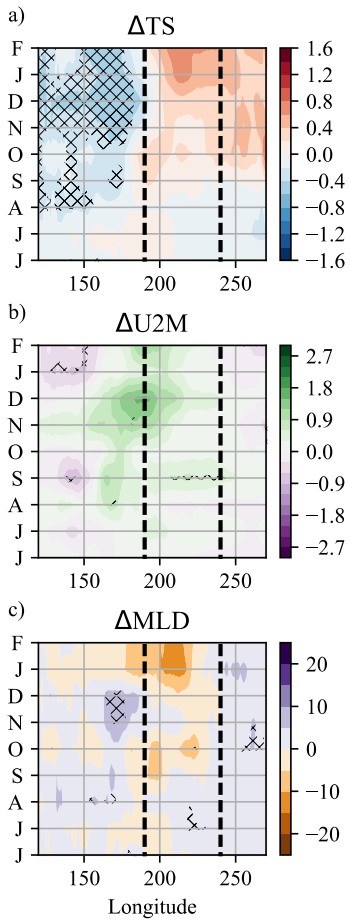

Figure S4: Hovmöller diagram of the impact of the volcanic aerosol in the tropical Pacific (5˚S-5˚N) on (a) surface temperature [K], (b) 2-meter zonal wind [m/s] with green (positive) indicating westerly anomalies, and (c) mixed layer depth [m] with blue (positive) indicate a deepening of the mixed layer. The volcanic impact is calculated by subtracting noP from P60. Hatches mark regions that are significant at 95% level. Dashed lines mark the longitudinal boundaries of the Niño3.4 box.

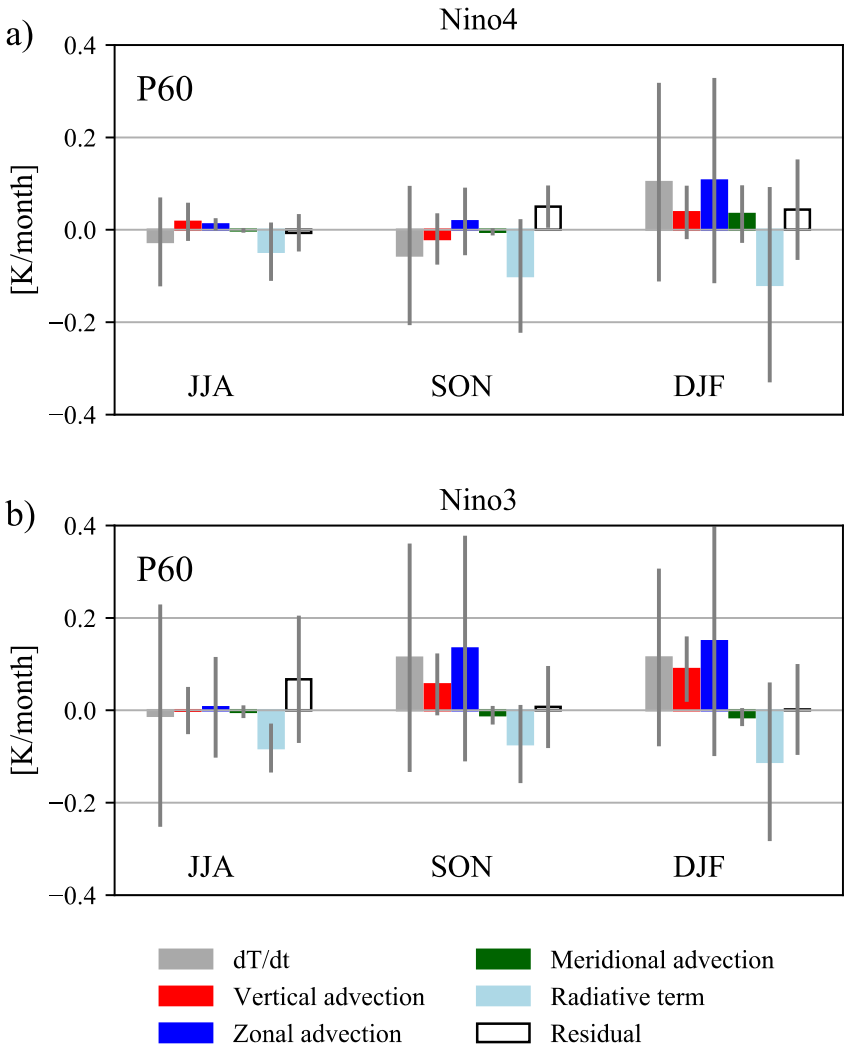

Figure S5: Changes in the terms of the mixed layer energy budget caused by Mt. Pinatubo in the Niño4 (above) and Niño3 (below) boxes in P60, seasonally averaged from June 1991 to February 1992. The error bars indicate one standard deviation.

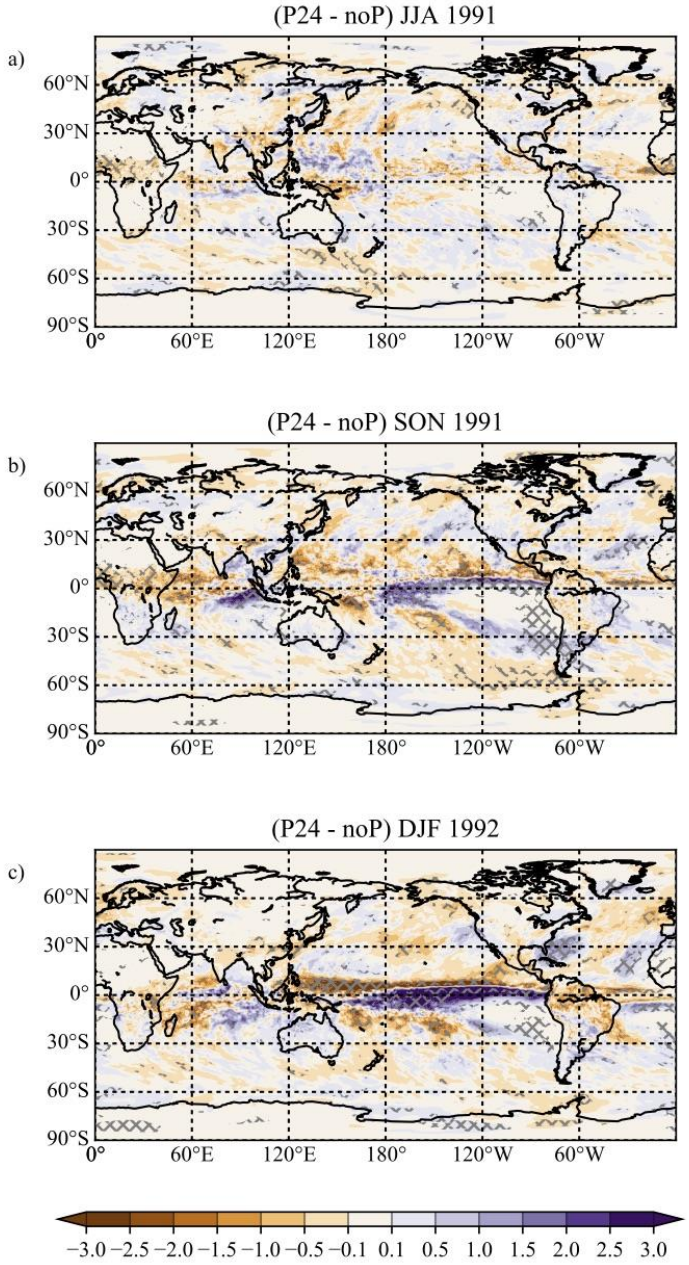

Figure S6: Impact of the volcanic aerosol on precipitation (in mm/day), calculated as the difference between P24 and noP. Hatched areas are significant at 95% level.

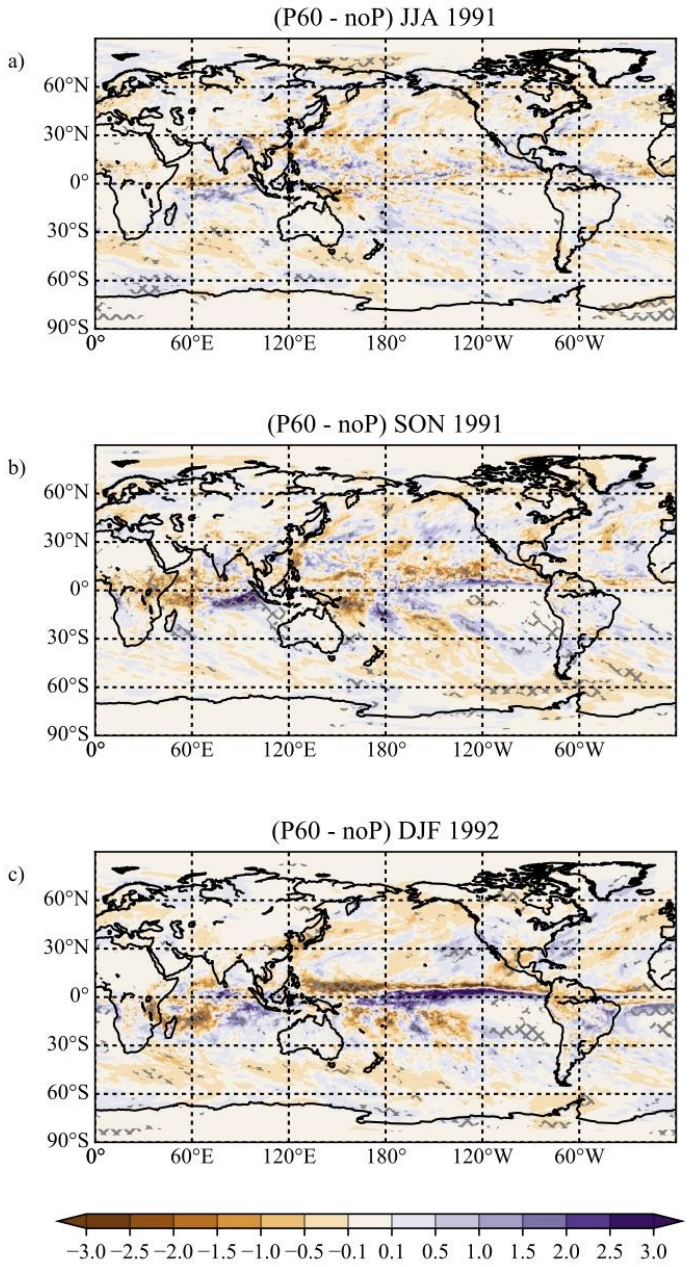

Figure S7: Impact of the volcanic aerosol on precipitation (in mm/day), calculated as the difference between P60 and noP. Hatched areas are significant at 95% level.

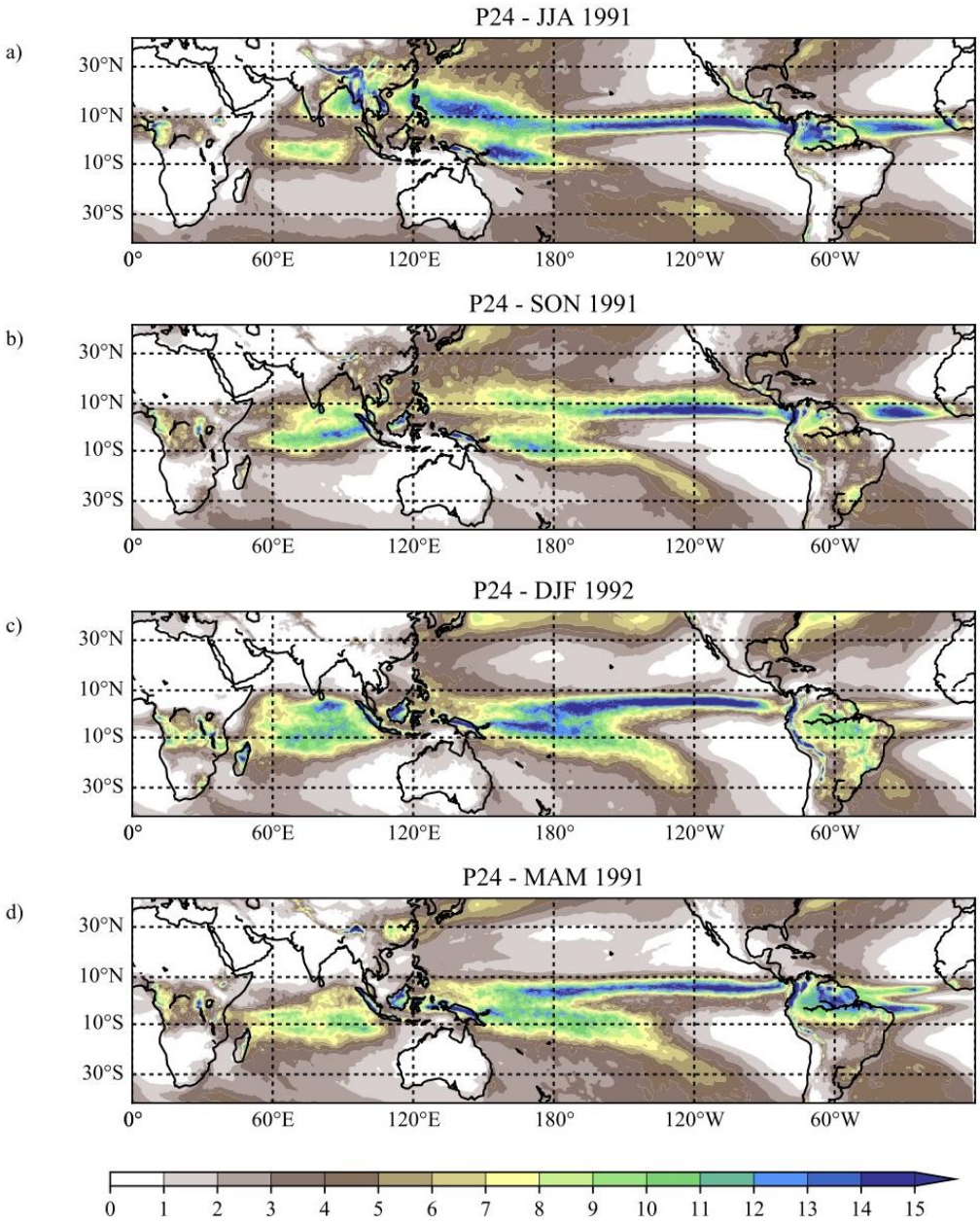

Figure S8. Seasonal precipitation rates (in mm/day) in the P24 ensemble mean. The drift has *not* been subtracted from these plots.