

1        **Supplementary Material for**

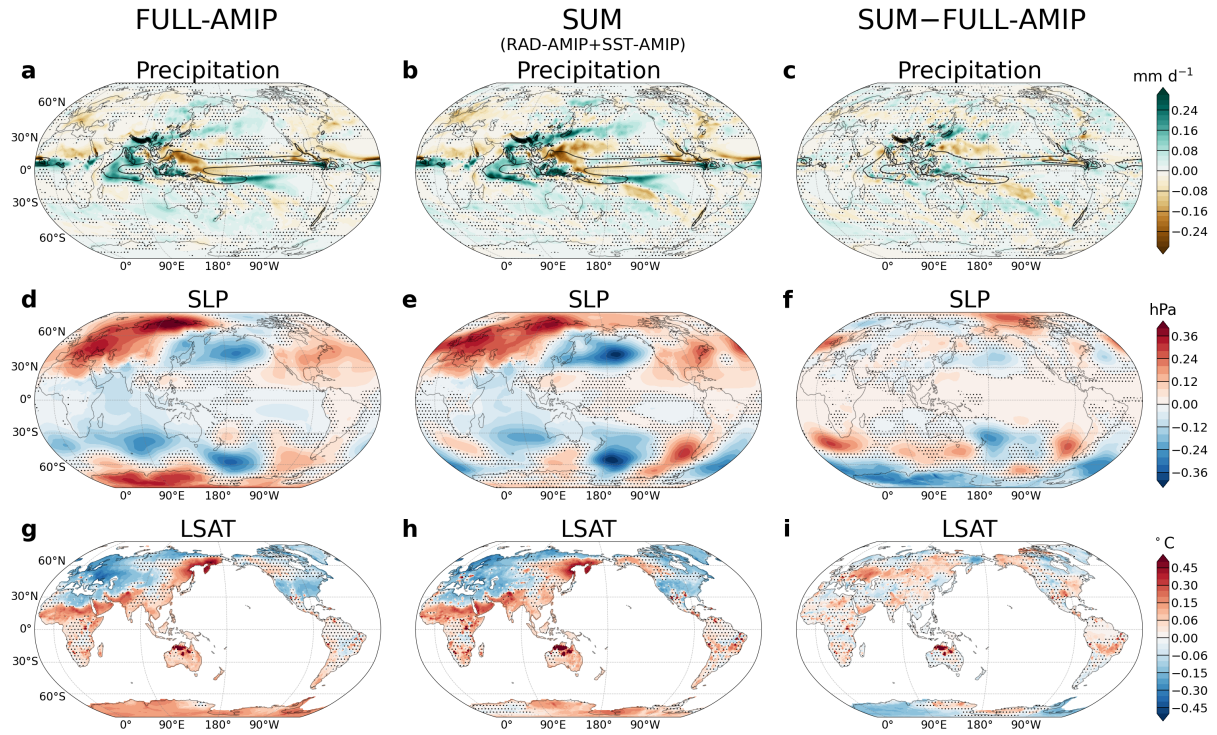
2        **“Separating atmospheric and ocean-mediated impacts of time-evolving**  
3        **industrial and biomass burning aerosols on historical boreal summer**  
4        **climate”**

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**Figure S1.** Additivity analysis based on AOD Mode 2 response of (a,b,c) precipitation ( $\text{mm d}^{-1}$ ), (d,e,f) sea level pressure (SLP; hPa) and (g,h,i) land surface air temperature (LSAT;  $^{\circ}\text{C}$ ) in FULL-AMIP, the sum of RAD-AMIP and SST-AMIP (SUM), and the difference of SUM and FULL-AMIP. Regions without stippling are significant at the 95% confidence level based on a two-tailed Student's t-test. Black contours on precipitation panels show the climatological 6  $\text{mm d}^{-1}$  isopleth. Regions without stippling are significant at the 95% confidence level based on a two-tailed Student's t-test. Black contours on precipitation panels show the climatological 6  $\text{mm d}^{-1}$  isopleth.