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Supplement of

Understanding land surface response to changing South Asian monsoon in a warming climate

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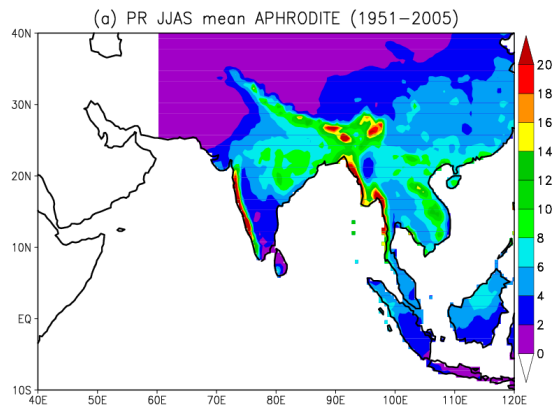


Figure S1. Spatial distribution of JJAS mean precipitation (mm d^{-1}) from APHRODITE during 1951-2005 .

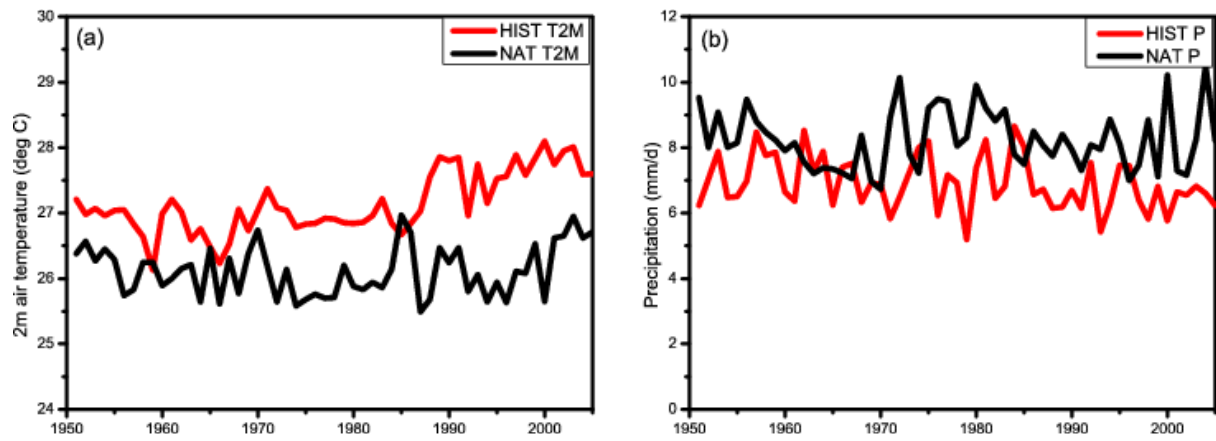


Figure S2. Area averaged time series of JJAS mean (a) 2m air temperature ($^{\circ}\text{C}$) and precipitation (mm d^{-1}) from LMDZ (red) HIST and (black) NAT simulations. Linear trends in 2m air temperature and precipitation for HIST experiment are $1.1\text{ }^{\circ}\text{C (55 yr)}^{-1}$, $-0.8\text{ mm d}^{-1} (55\text{ yr)}^{-1}$ respectively (and significant at 95% level). The trends in NAT are close to zero and statistically not significant.

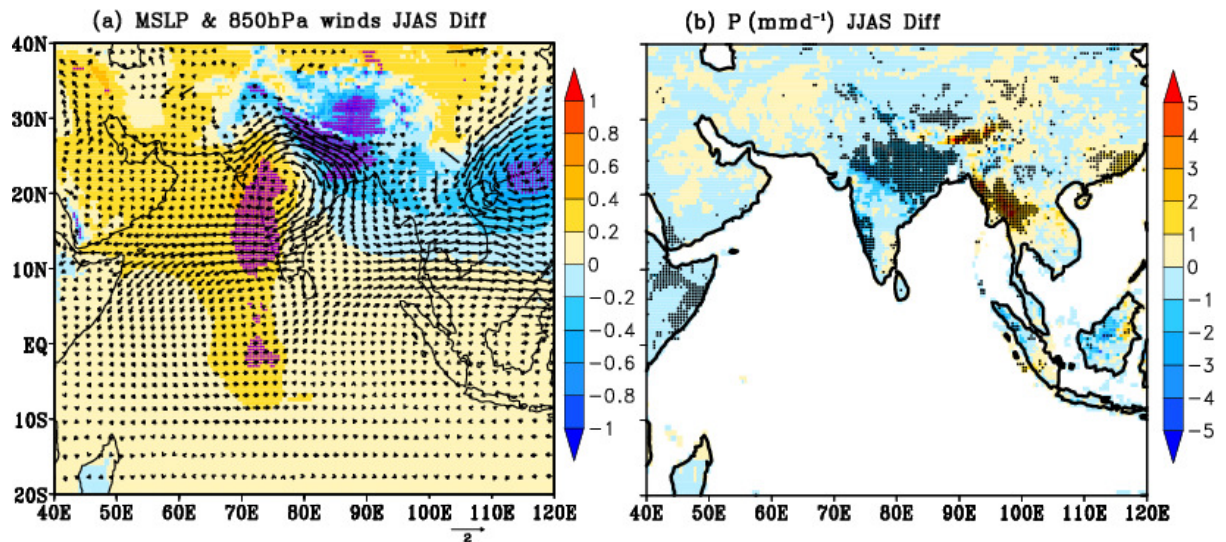


Figure S3. Spatial distribution of JJAS mean difference of (a) Mean sea level pressure (shaded; hPa), wind at 850 hPa (vectors; ms^{-1}) and (b) precipitation (mm d^{-1}) between HIST and NAT experiments of LMDZ for 1951-2005. The significant differences at 95% level for wind and precipitation are stippled.

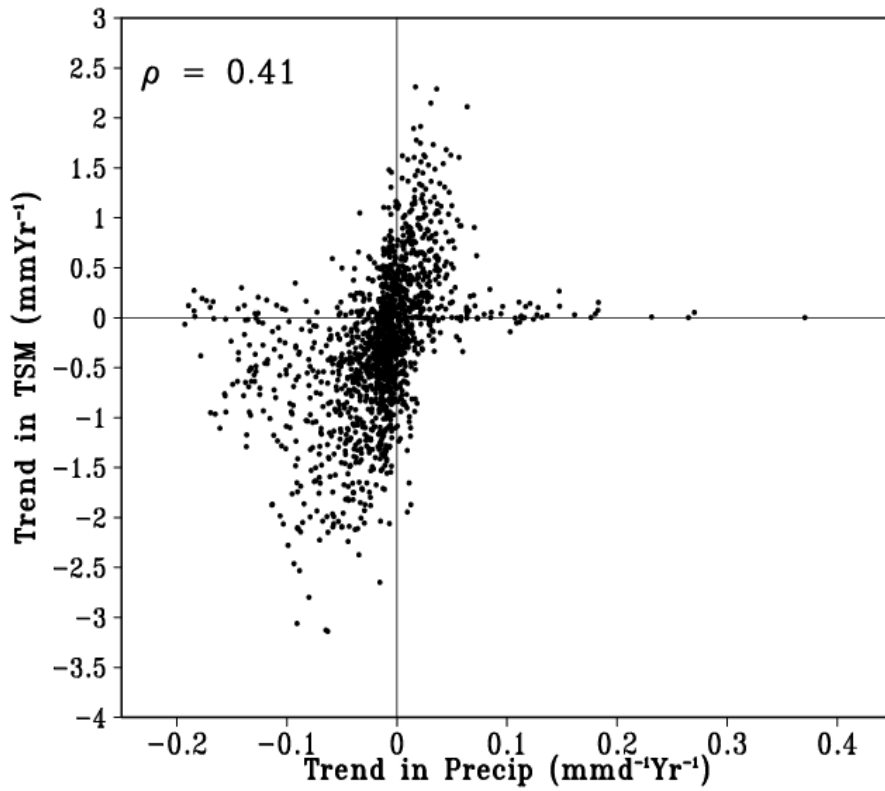


Figure S4. Scatter plot of trends in JJAS mean precipitation versus total soil moisture over the Indian land region 70°E-90°E; 10°N-28°N for the 55-year (1951-2005) period for HIST simulation of LMDZ.