

Table 1. Soil NO_x emissions scheme settings

Name	Soil NO _x emissions scheme
Control	Soil temperature is derived from 2-m air temperature through linear and empirical relationships, and the old exponential function is used.
ST _{old}	MERRA soil temperature is used, and the old T function is kept.
ST _{new}	MERRA soil temperature is used, and the new T function is used.

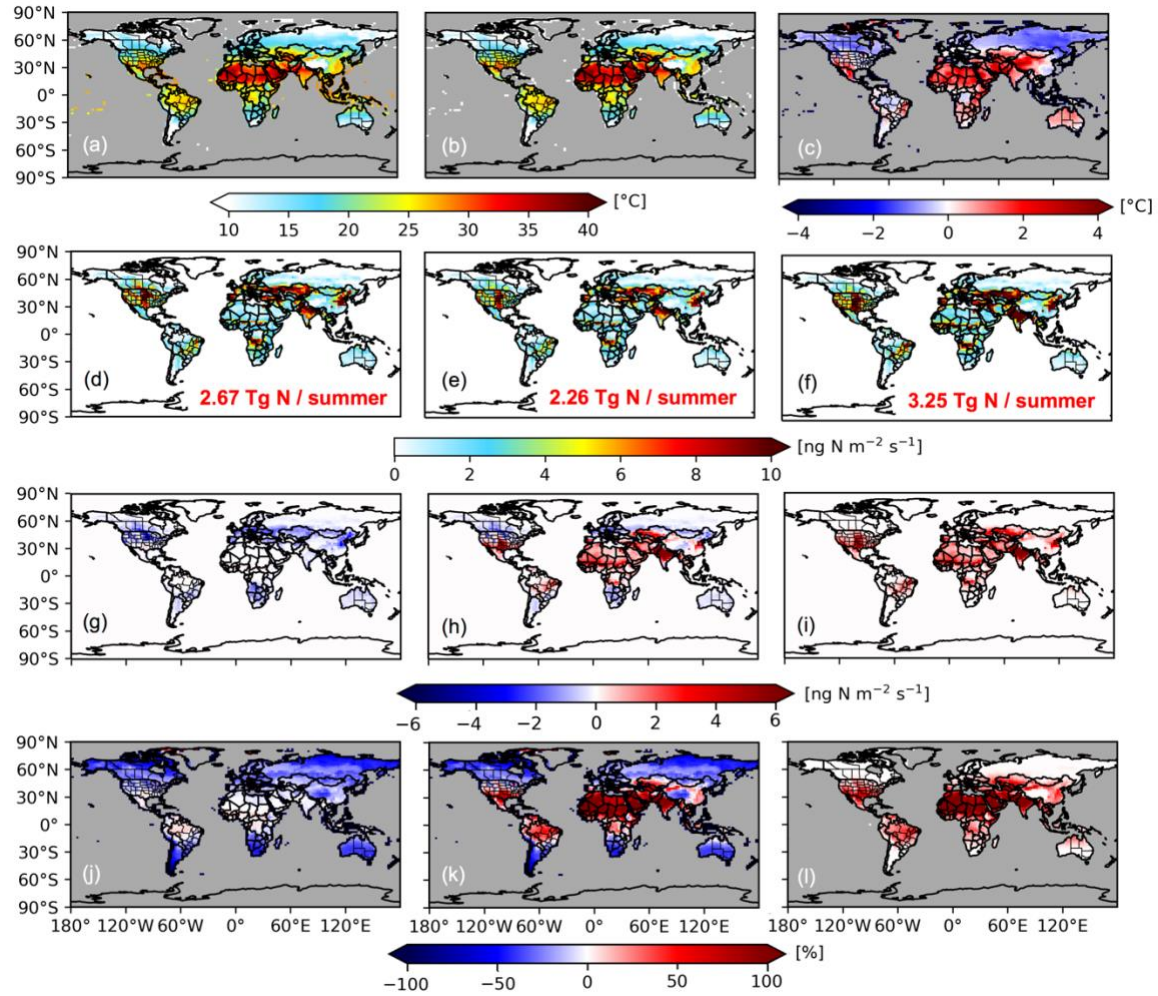


Figure 1. Summer (JJA) averages in 2005-2019 of 2-m air temperature (a), soil temperature (b), the difference (c) between soil temperature and 2-m air temperature, soil NO_x emissions from the Control run (d), the ST_{old} run (e), the ST_{new} run (f). Also shown are the corresponding differences/relative differences between ST_{old} and Control, between ST_{new} and Control, and between ST_{new} and ST_{old} are shown in (g)/(j), (h)/(k), and (i)/(l), respectively.