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Historical (1700–2012) global multi-model estimates of the fire emissions from the Fire Modeling Intercomparison Project (FireMIP)

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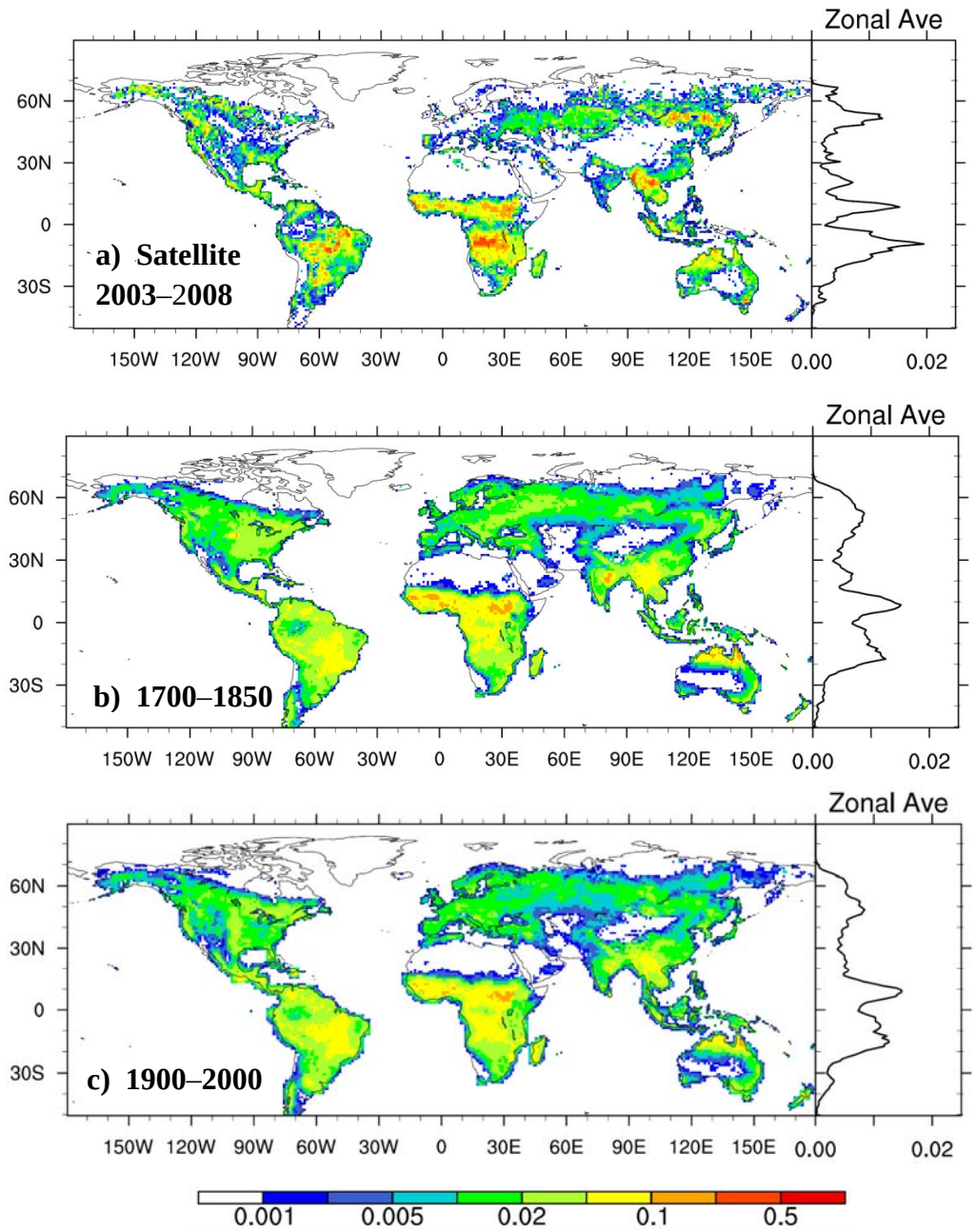

Figure S1. Standard deviations of time-averaged annual fire BC emissions (g BC m^{-2} yr^{-1}) and the zonal averages among a) satellite-based estimates for 2003–2008 and FireMIP model simulations for b) 1700–1850 and c) 1900–2000.

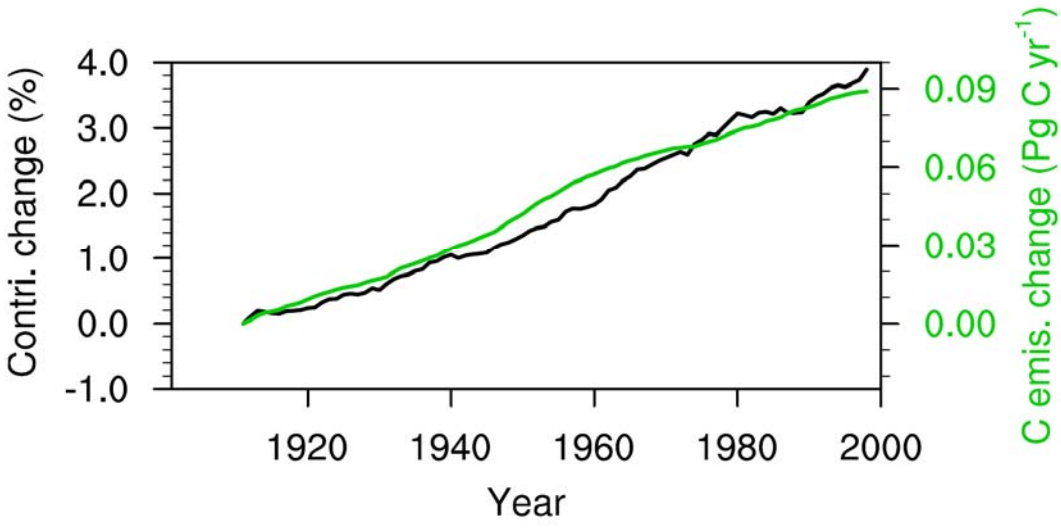

Figure S2. Changes in global annual carbon emissions of crop fires (green) and contribution of emissions from crop fires to total emissions (black) in the 20th century. A 21-year running mean is used.

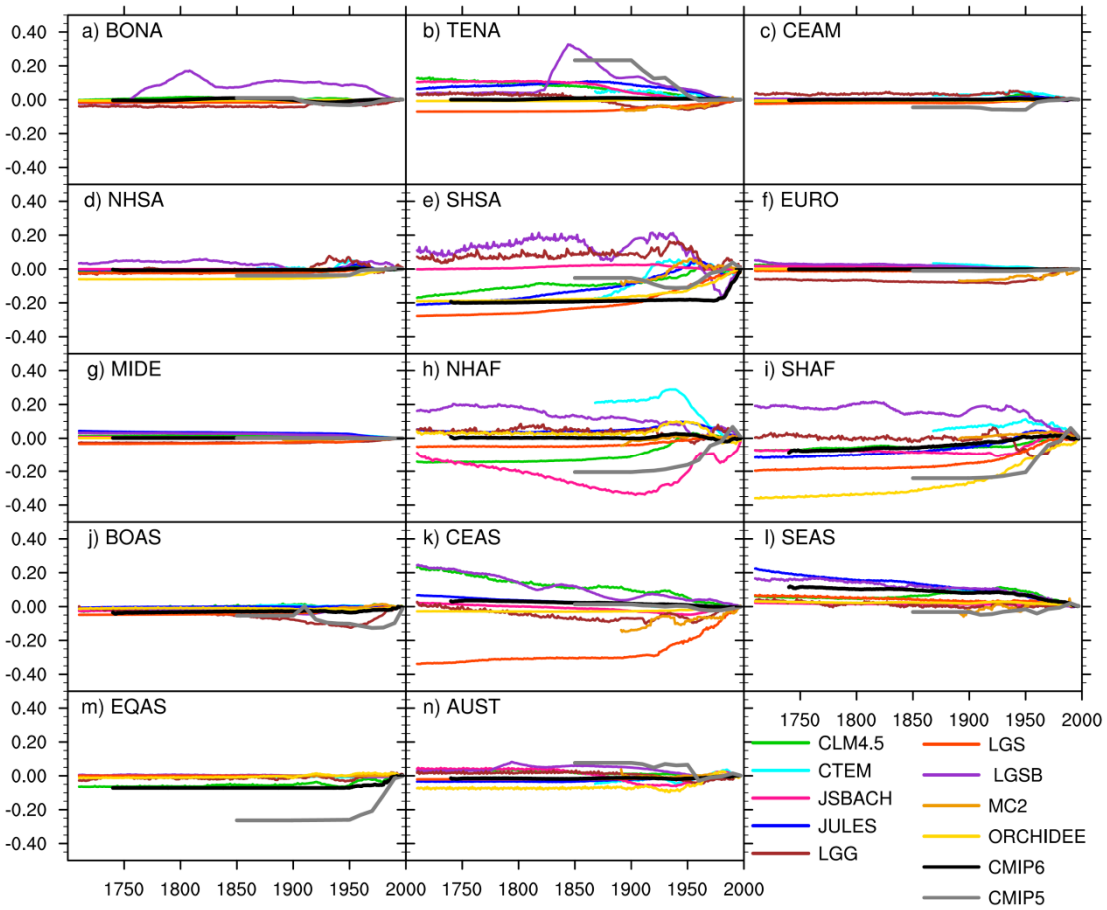

Figure S3. Long-term changes of annual regional fire BC emissions (Tg BC yr^{-1}) from FireMIP models and CMIPs. A 21-year running mean is used.

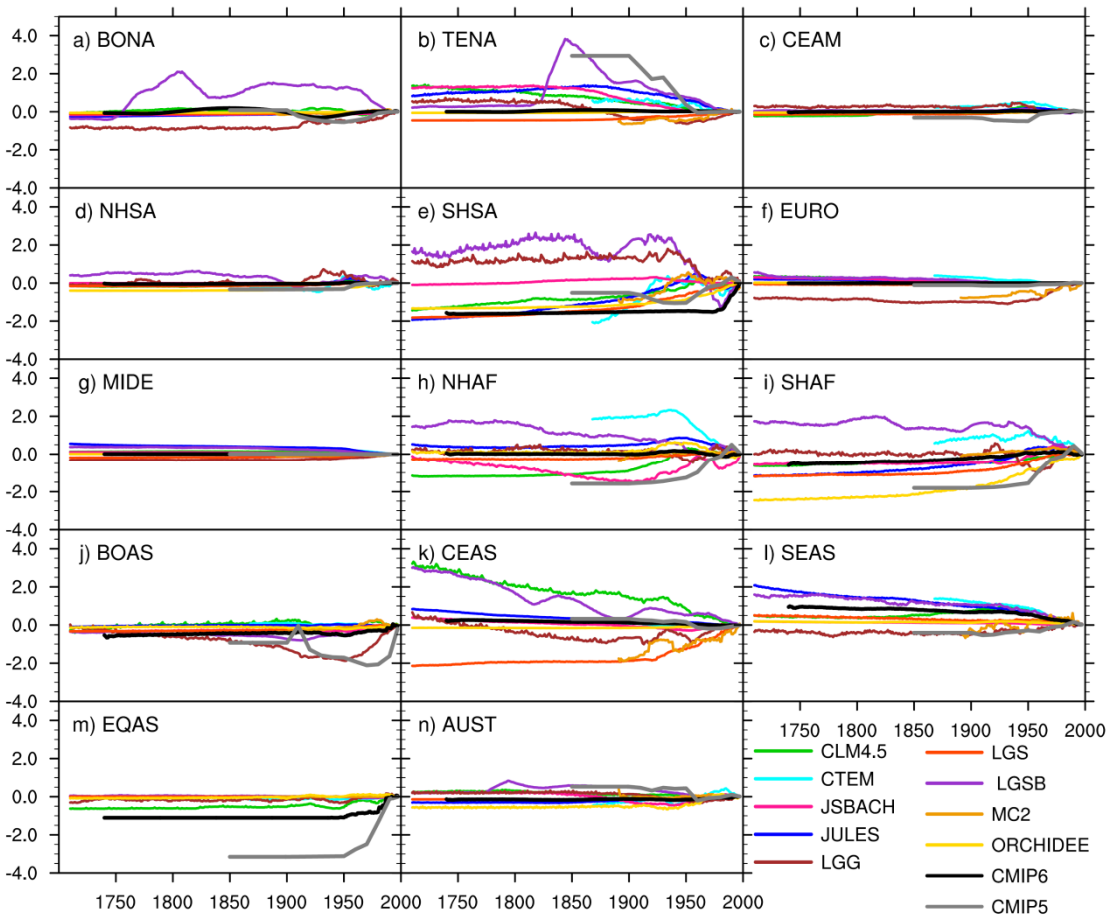

Figure S4. Same as Fig. S3, but for fire OC emissions (Tg OC yr^{-1}).

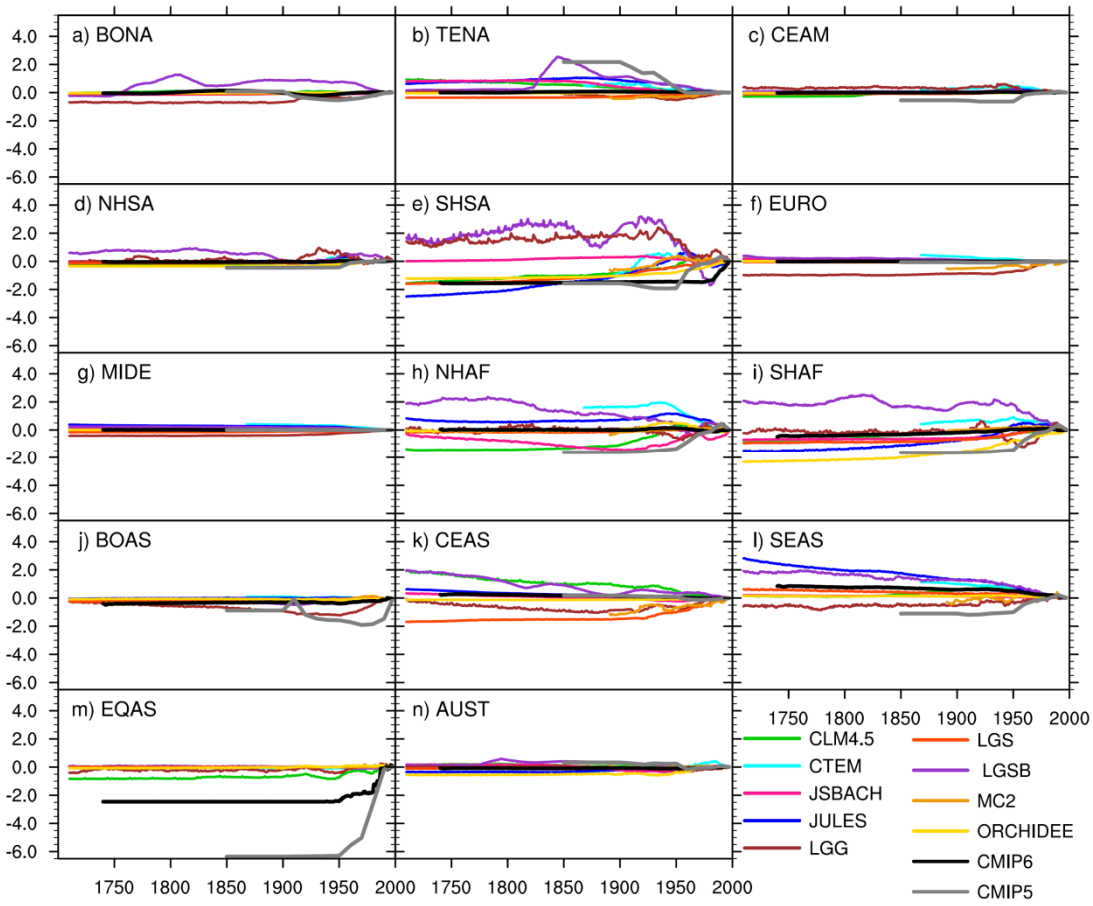

Figure S5. Same as Fig. S3, but for fire CH_4 emissions (Tg CH_4 yr^{-1}).

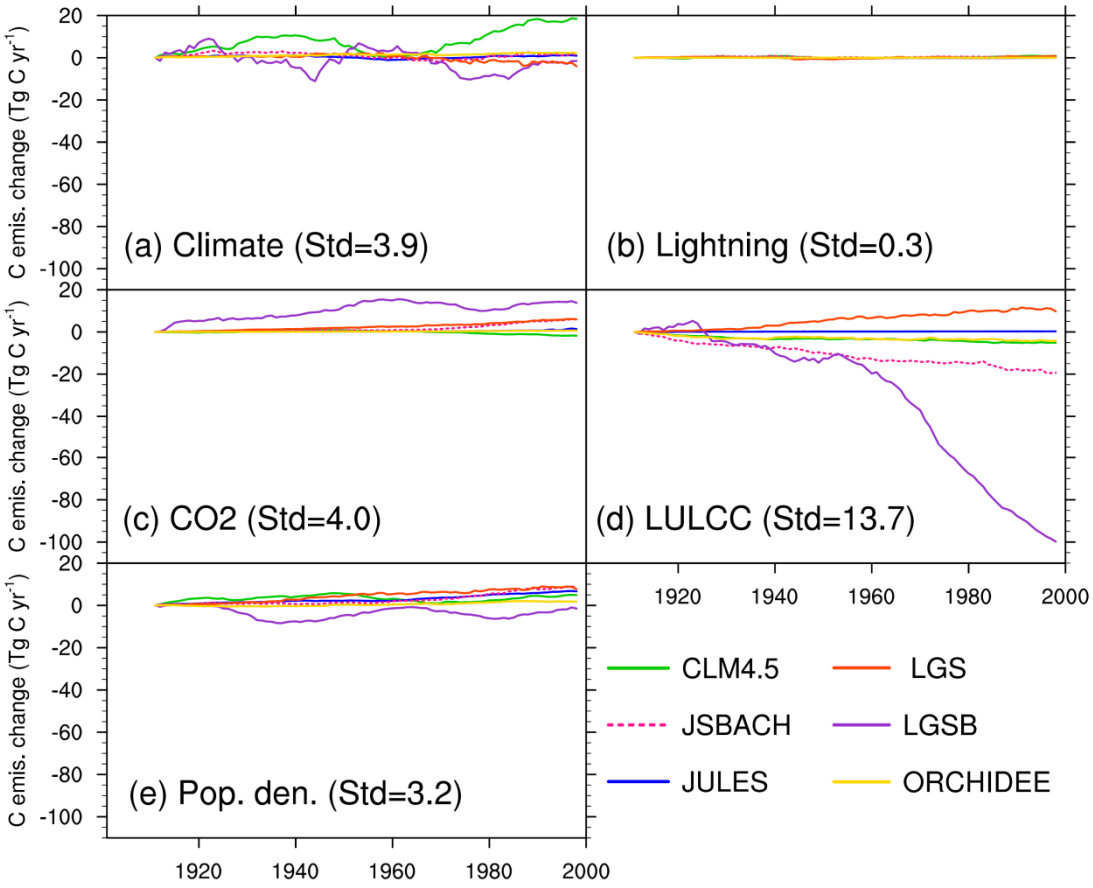

Figure S6. Change in annual BONA (Boreal North America) fire carbon emissions (Tg C yr^{-1}; Tg=10^{12}g) in the 20th century due to changes in (a) climate, (b) lightning frequency, (c) atmospheric CO_2 concentration, (d) land use and land cover change (LULCC), and (e) population density (control run – sensitivity run). A 21-year running mean is used. The standard deviation (Std) of multi-model simulated long-term changes averaged over the 20th century is also given in the bracket.

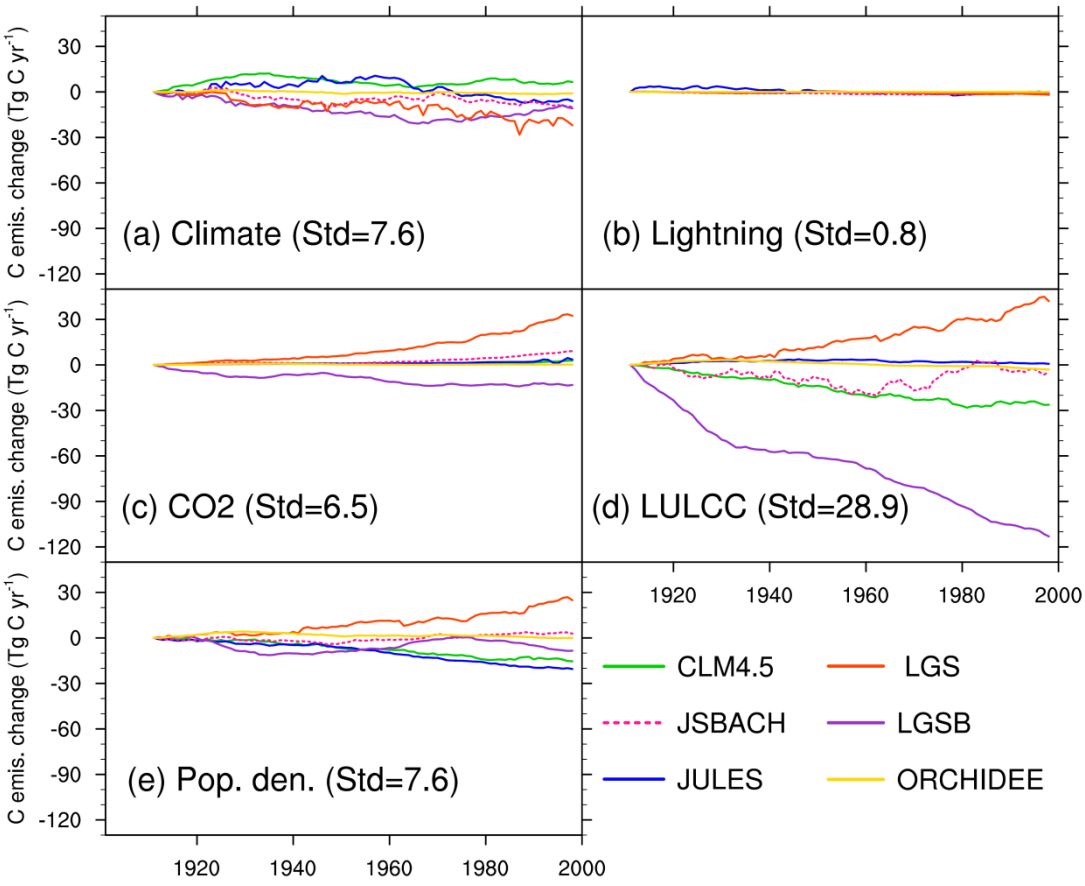

Figure S7. Same as Fig. S6, but for TENA (Temperate North America).

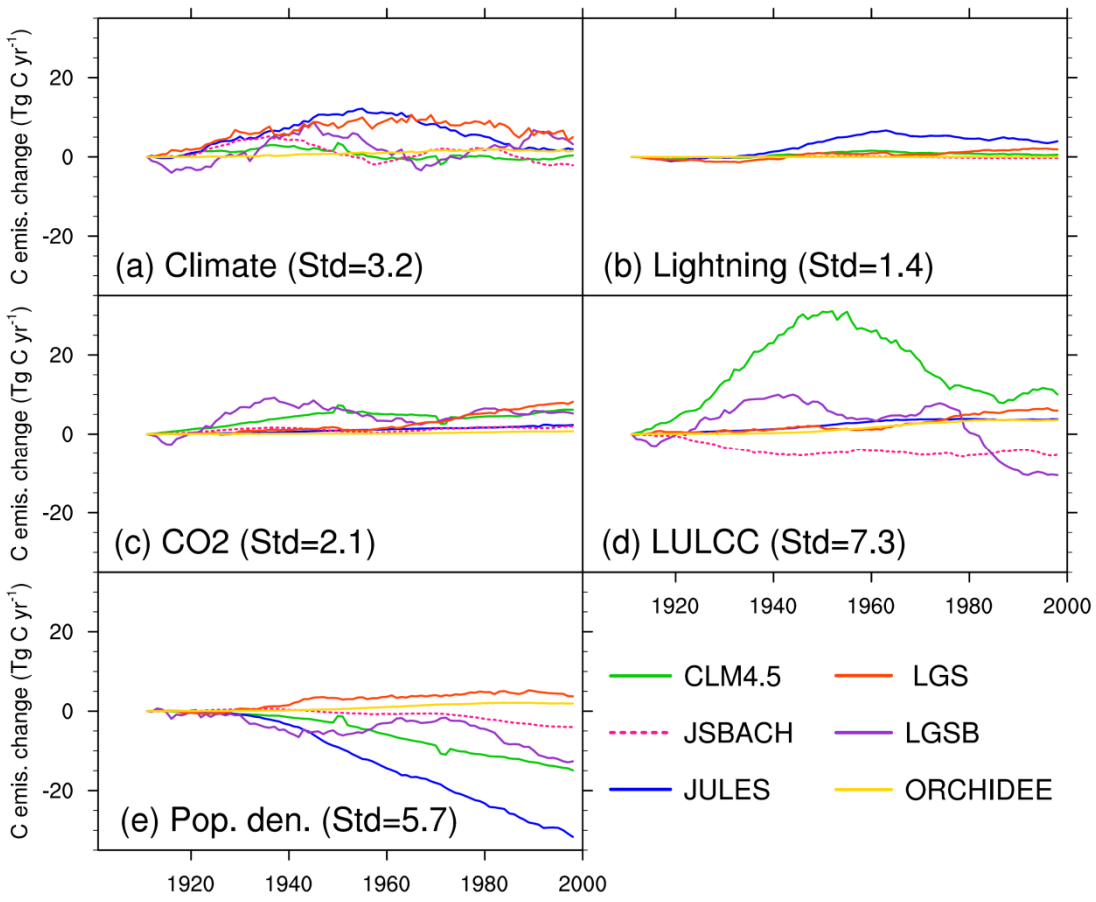

Figure S8. Same as Fig. S6, but for CEAM (Central America).

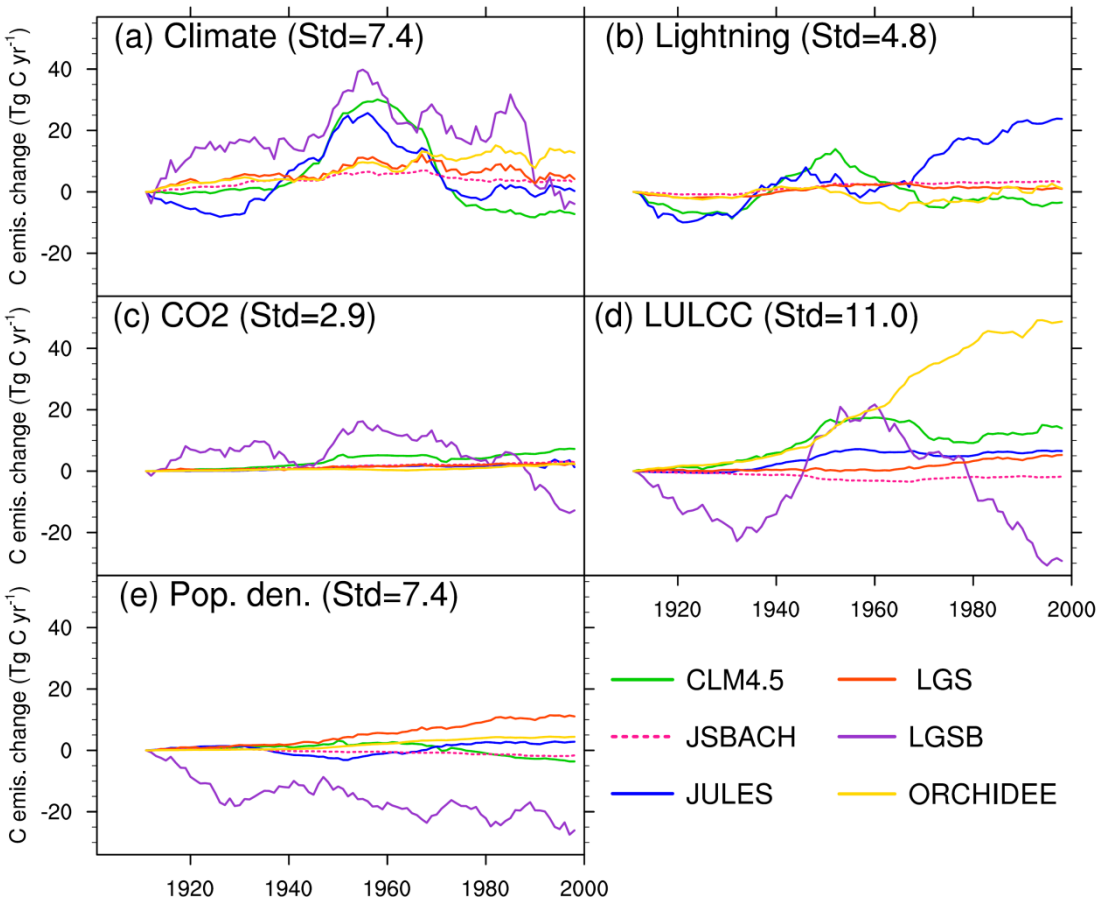

Figure S9. Same as Fig. S6, but for NHSA (Northern Hemisphere South America)

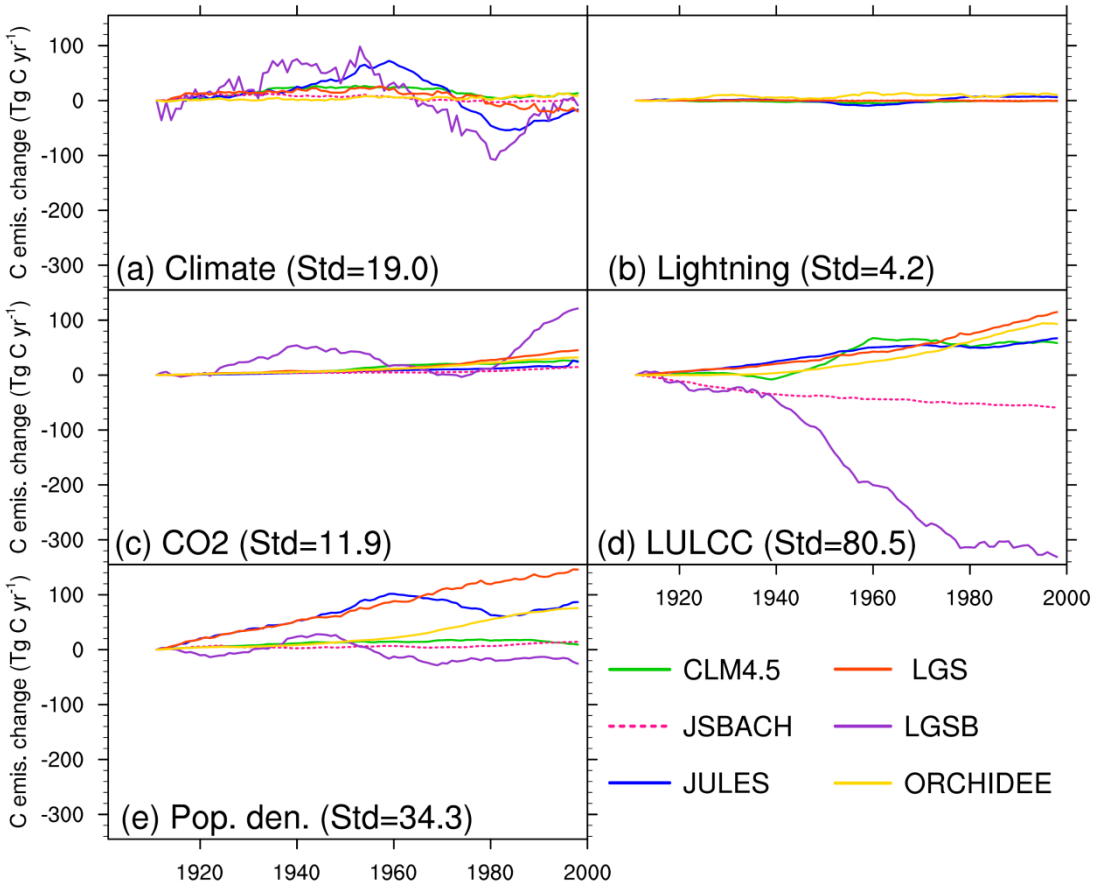

Figure S10. Same as Fig. S6, but for SHSA (Southern Hemisphere South America)

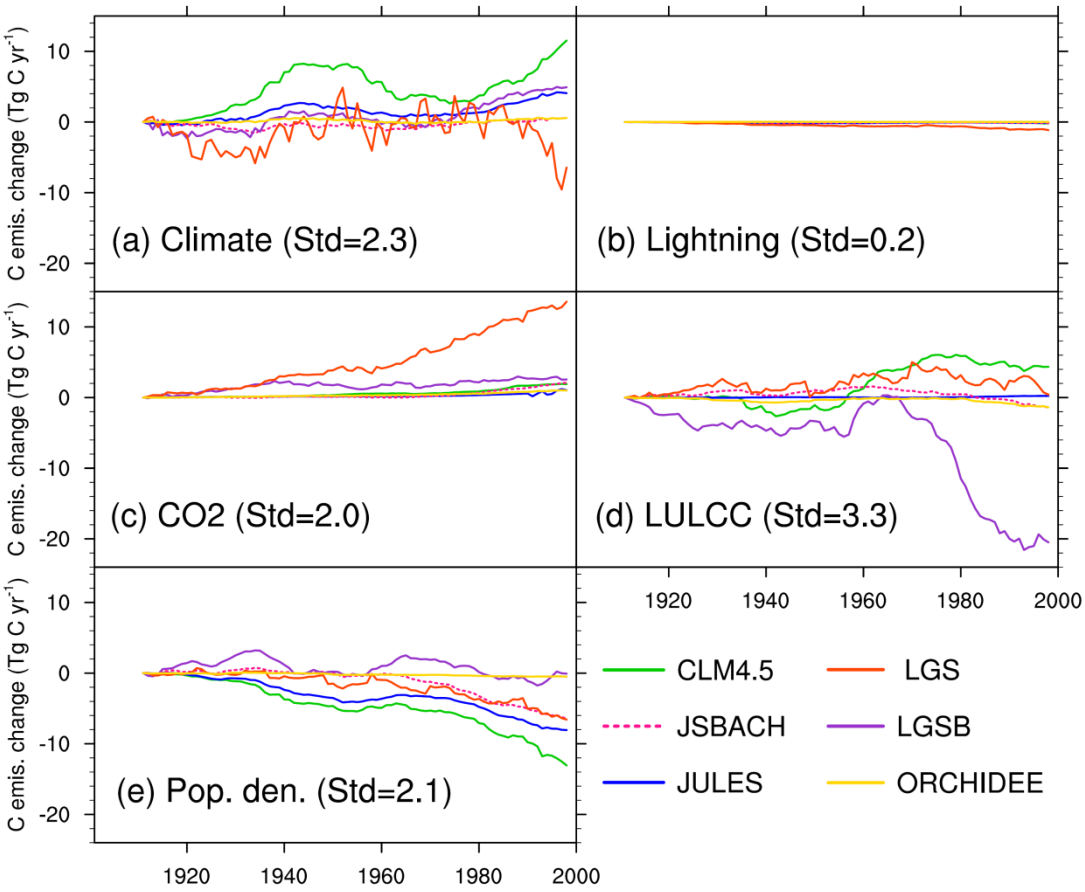

Figure S11. Same as Fig. S6, but for EURO (Europe).

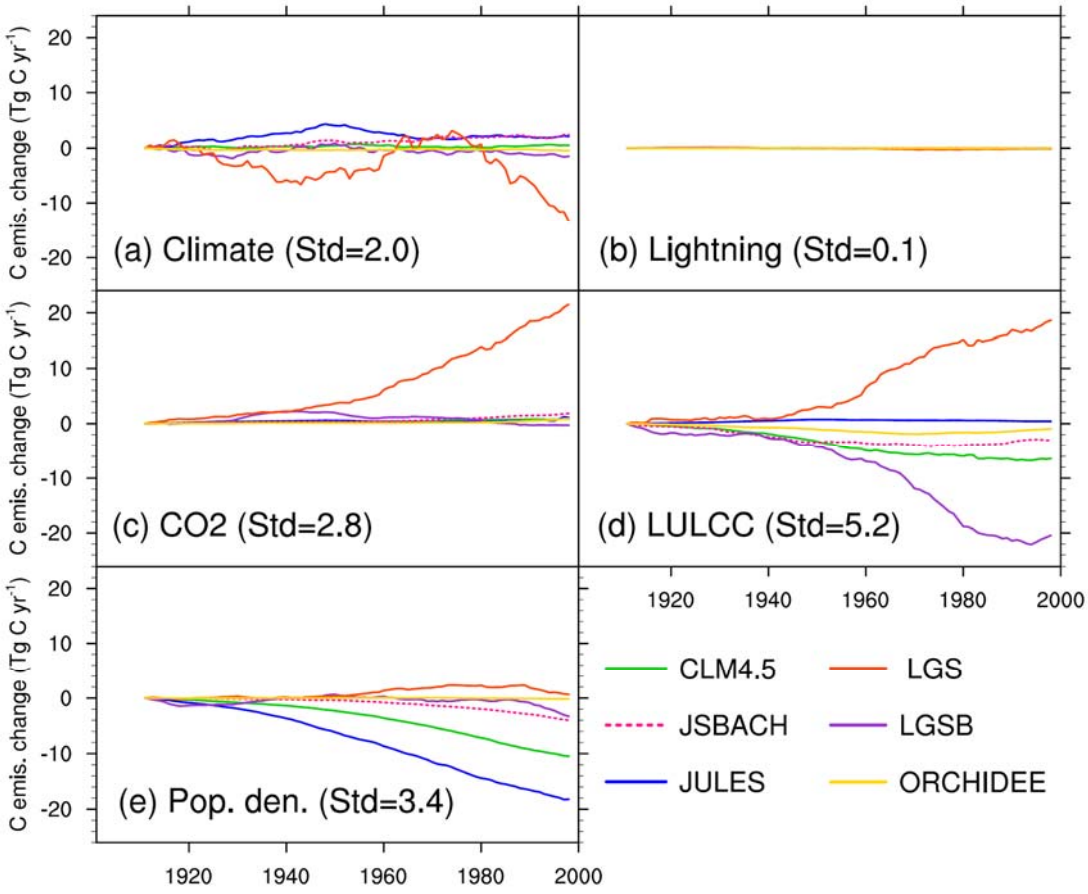

Figure S12. Same as Fig. S6, but for MIDE (Middle East).

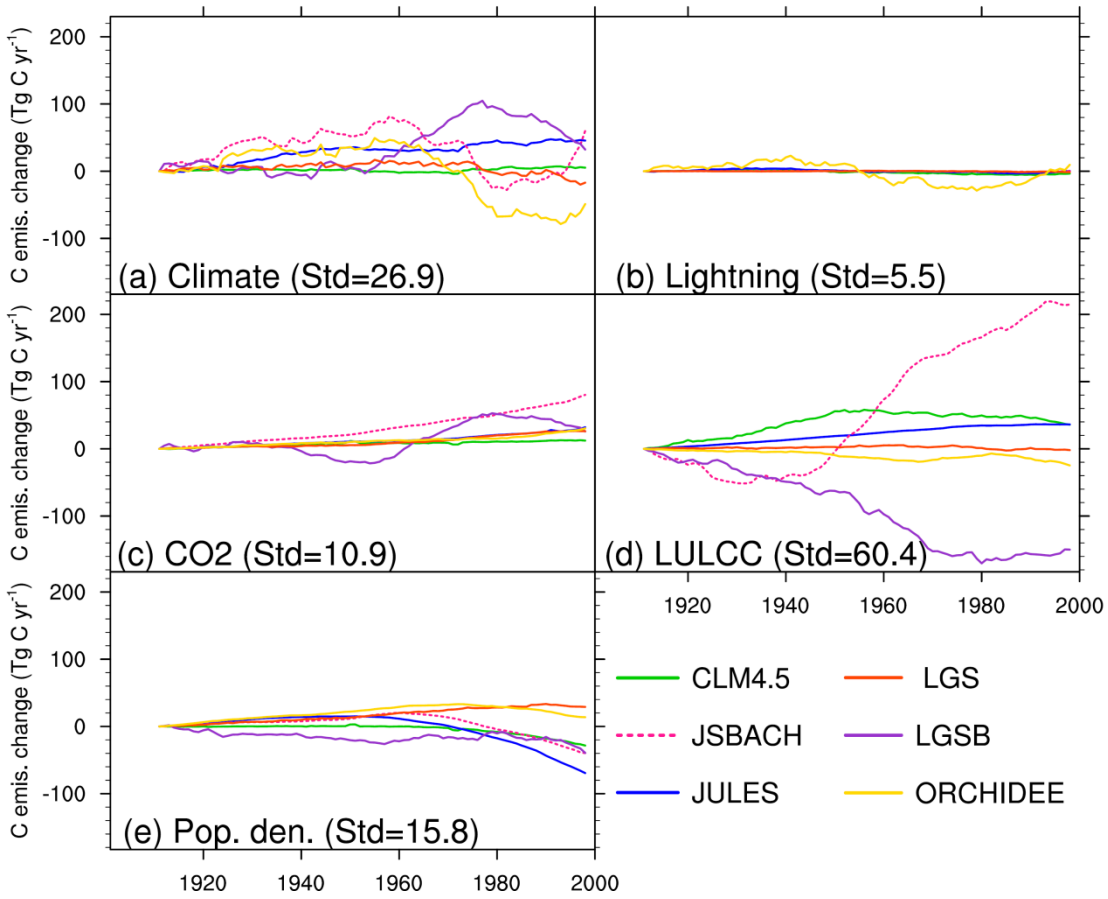

Figure S13. Same as Fig. S6, but for NHAF (Northern Hemisphere Africa).

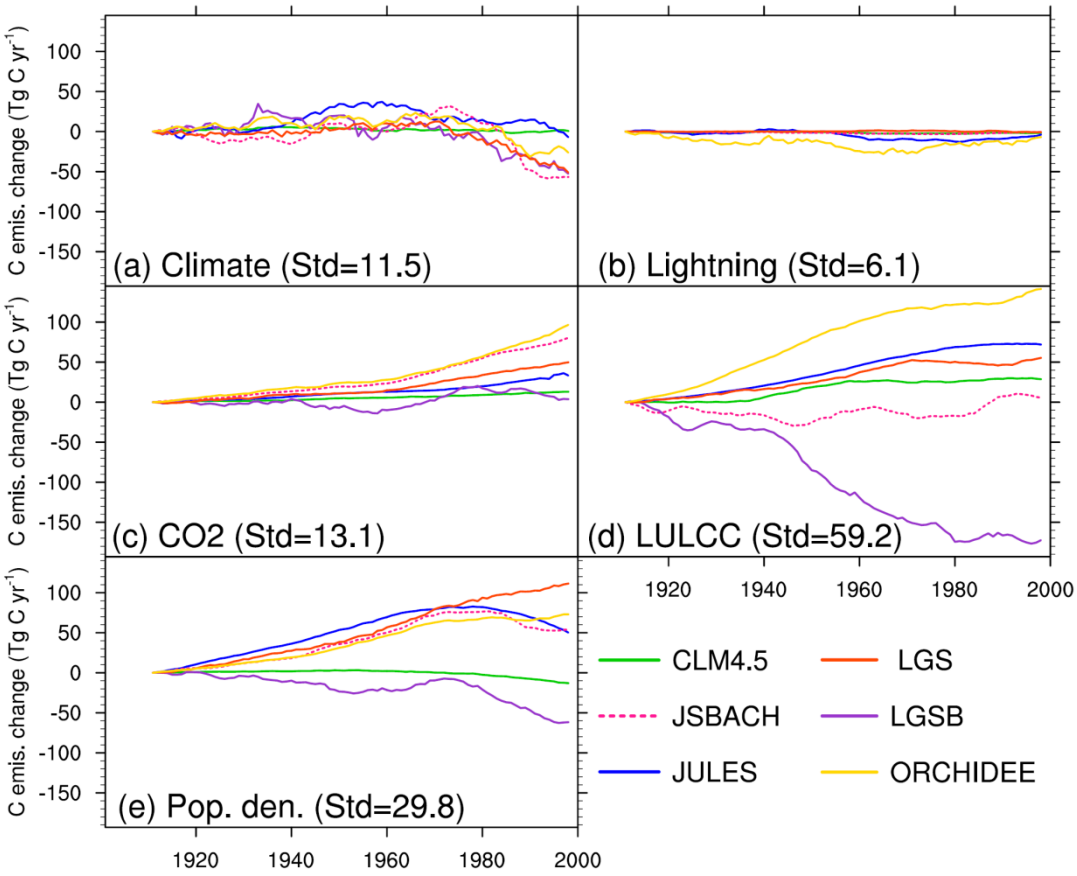

Figure S14. Same as Fig. S6, but for SHAF (Southern Hemisphere Africa).

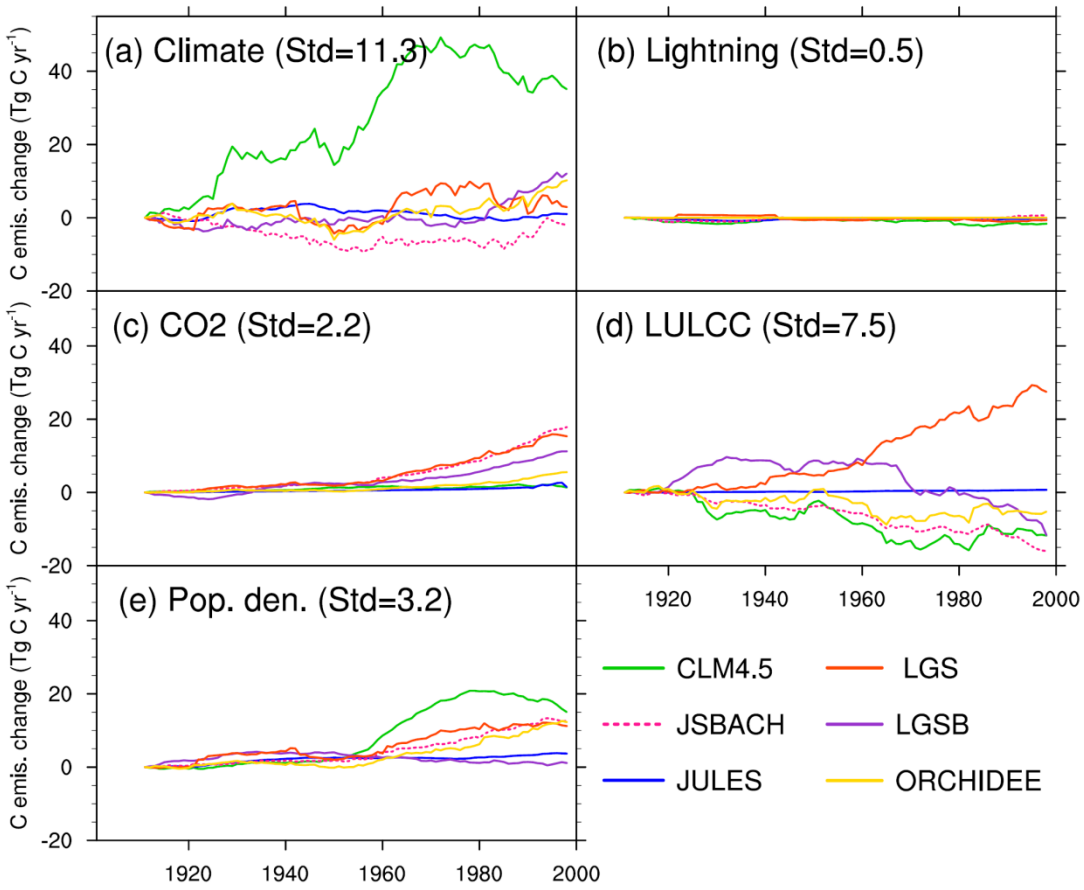

Figure S15. Same as Fig. S6, but for BOAS (Boreal Asia).

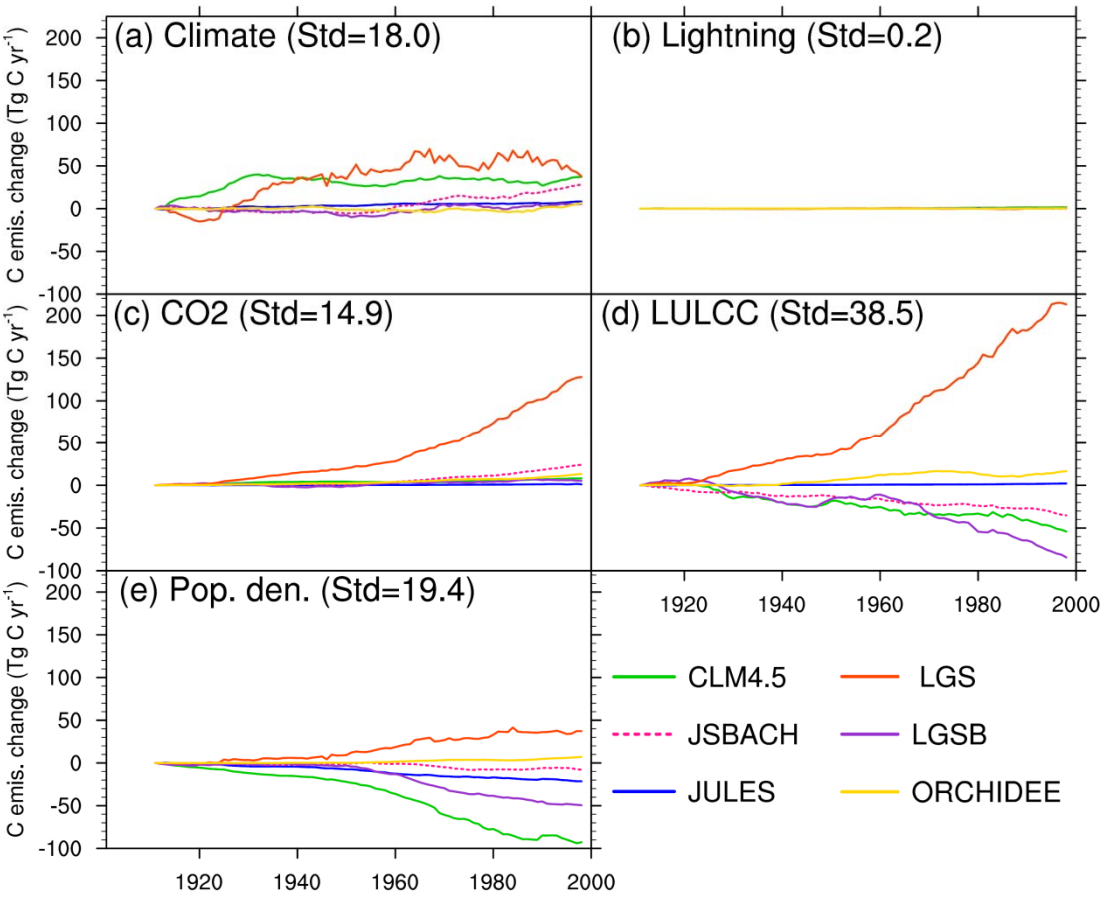

Figure S16. Same as Fig. S6, but for CEAS (Central Asia).

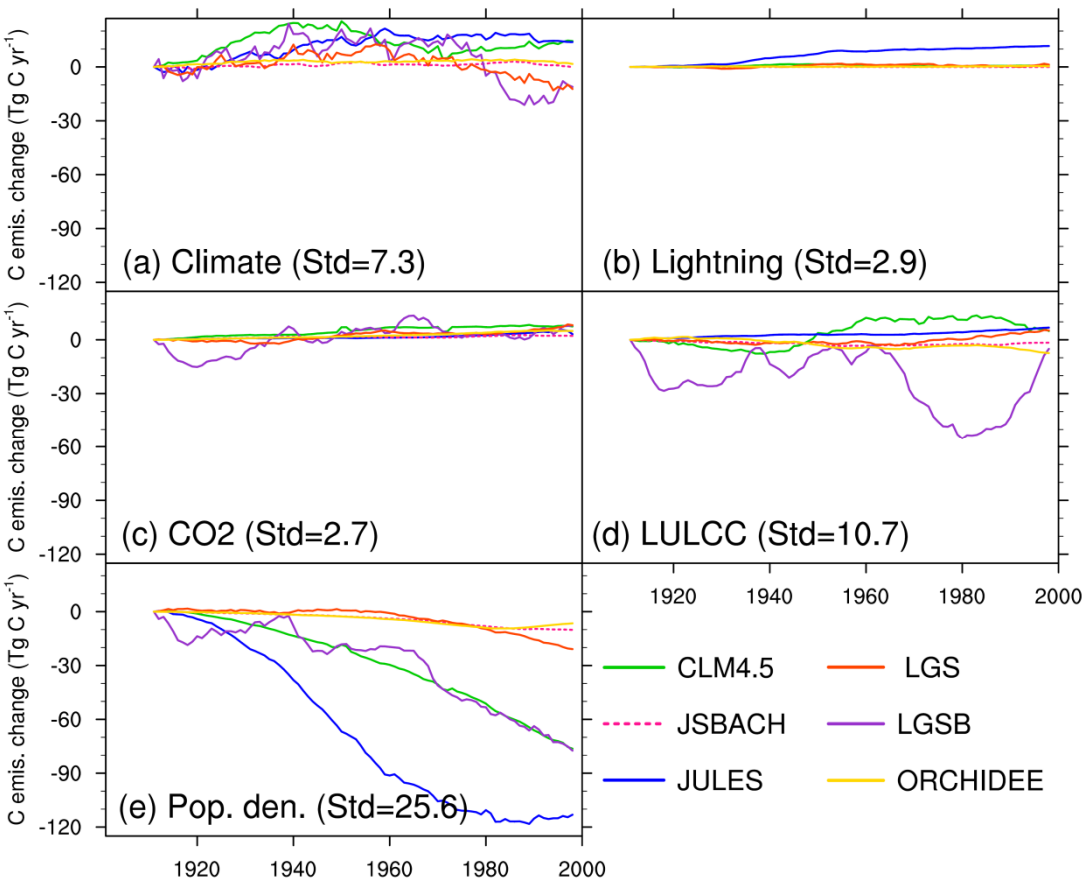

Figure S17. Same as Fig. S6, but for SEAS (South East Asia).

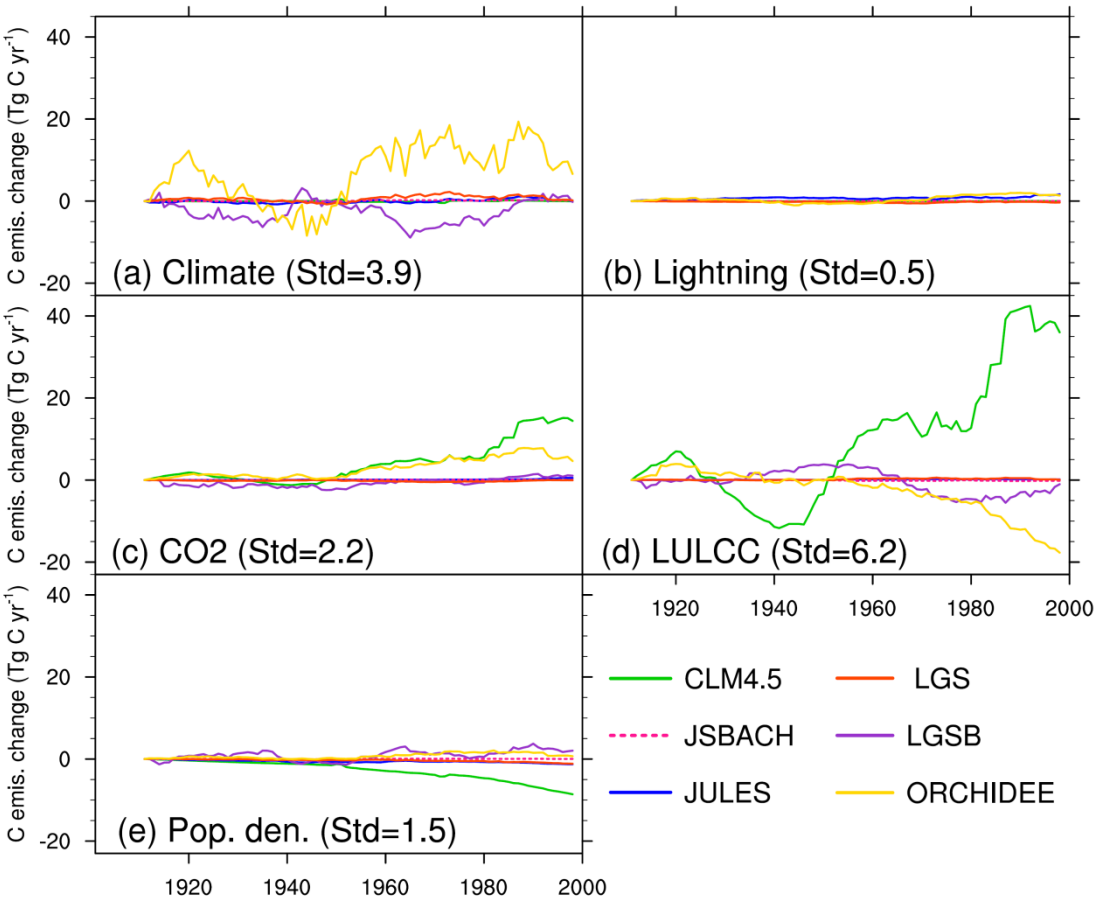

Figure S18. Same as Fig. S6, but for EQAS (Equatorial Asia).

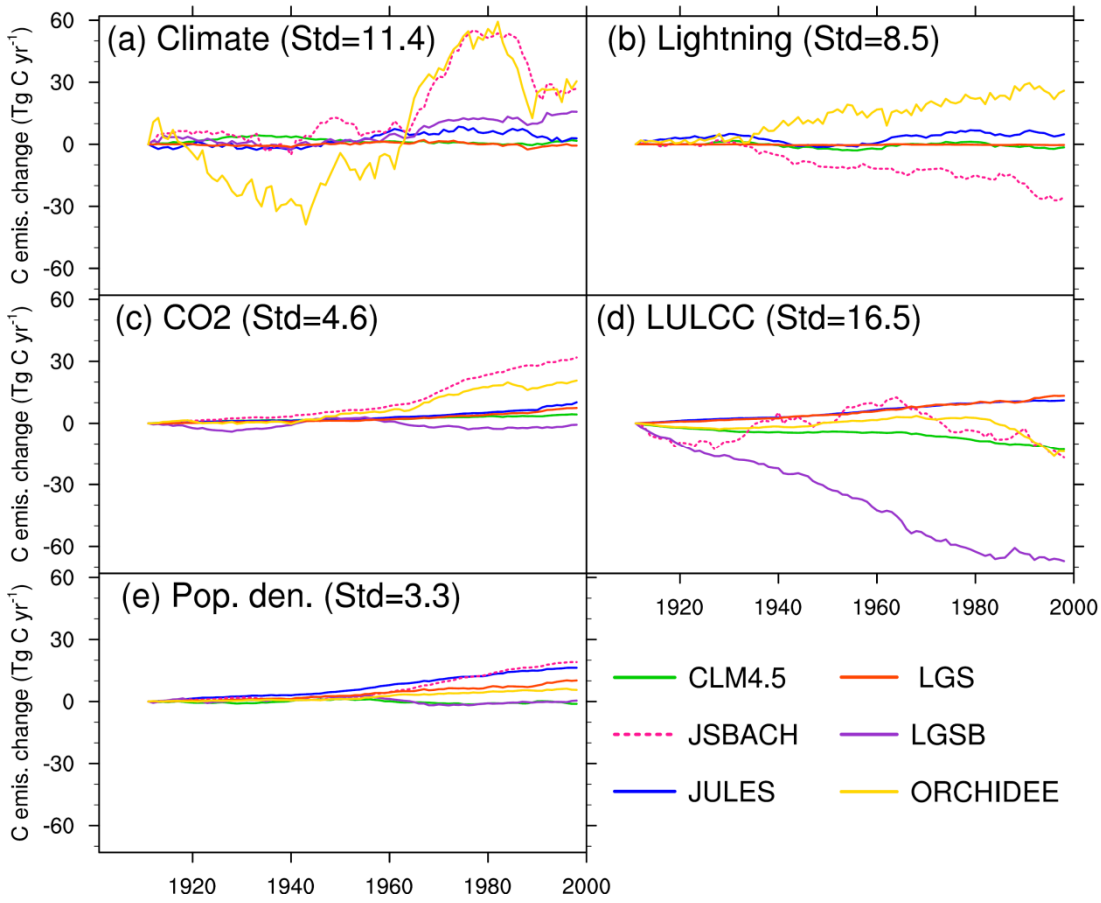

Figure S19. Same as Fig. S6, but for AUST (Australia).