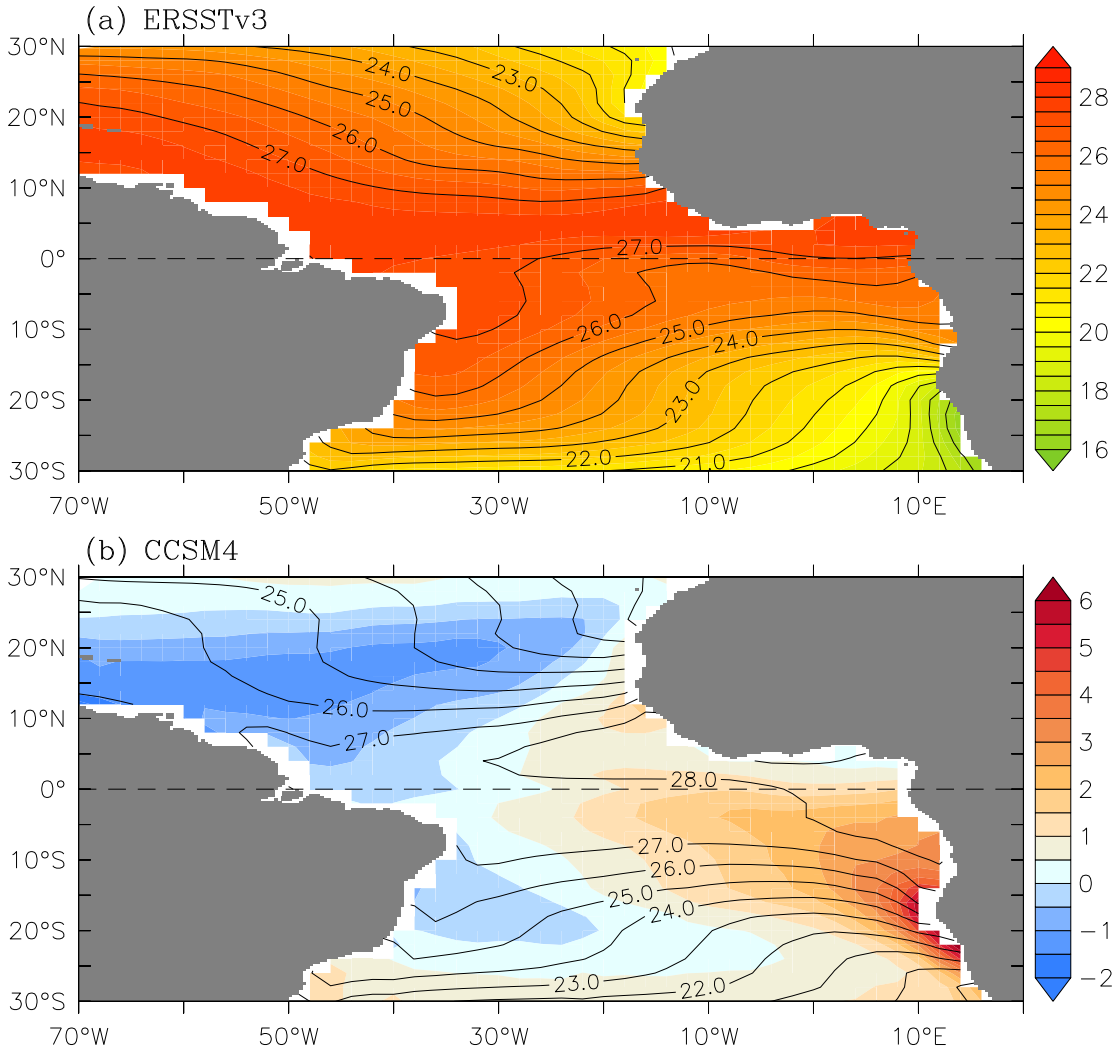


Figure 1. Annually averaged climatological SSTs in the tropical Atlantic from (a) ERSSTv3 for 1949-2005; and from (b) CCSM4 historical simulation for 1949-2005. The SST bias in CCSM4 (shaded) is also shown in (b). The unit is °C

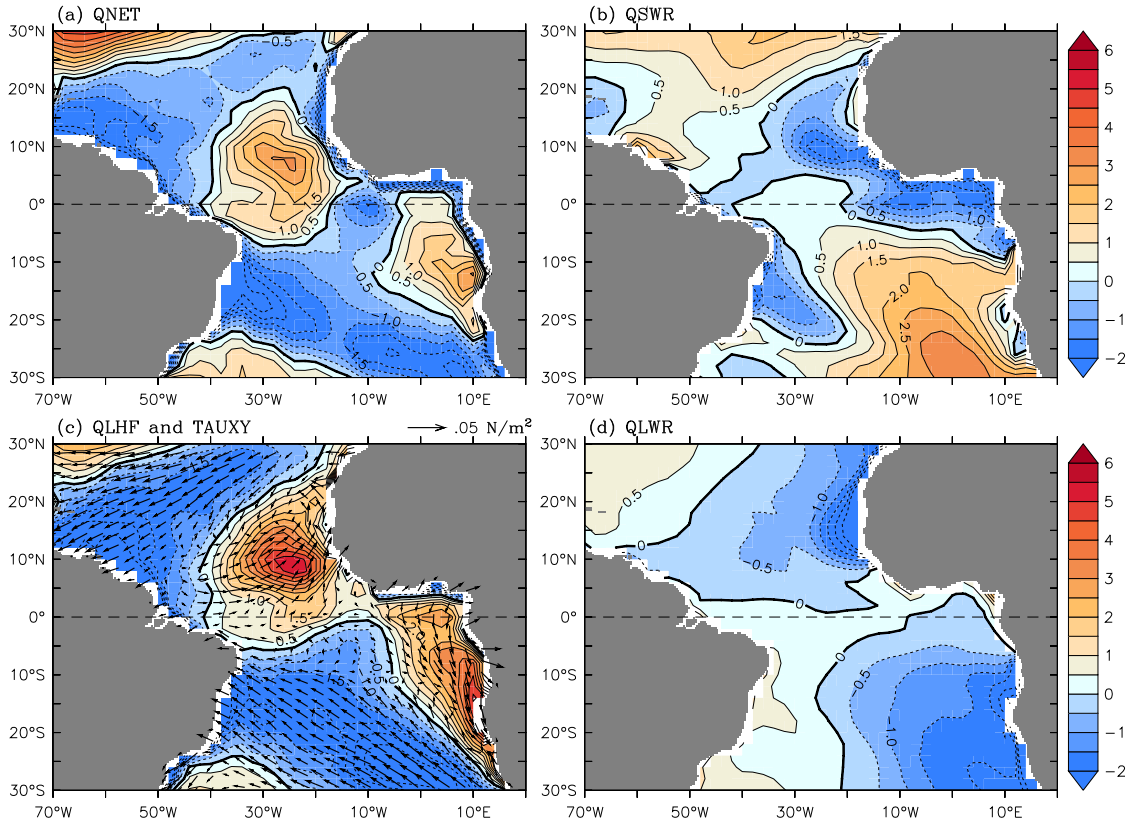


Figure 2. Annually averaged implicit SST bias in EXP_ATM due to (a) the net surface heat flux bias, which is computed by integrating the net heat flux bias in EXP_ATM for one year from January 1 to December 31, then dividing it by 12 months. Contributions by (b) latent heat flux bias, (c) shortwave radiative heat flux bias, and (d) longwave radiative heat flux bias. The vectors in (b) show the annually averaged surface wind stress bias. The unit is °C.

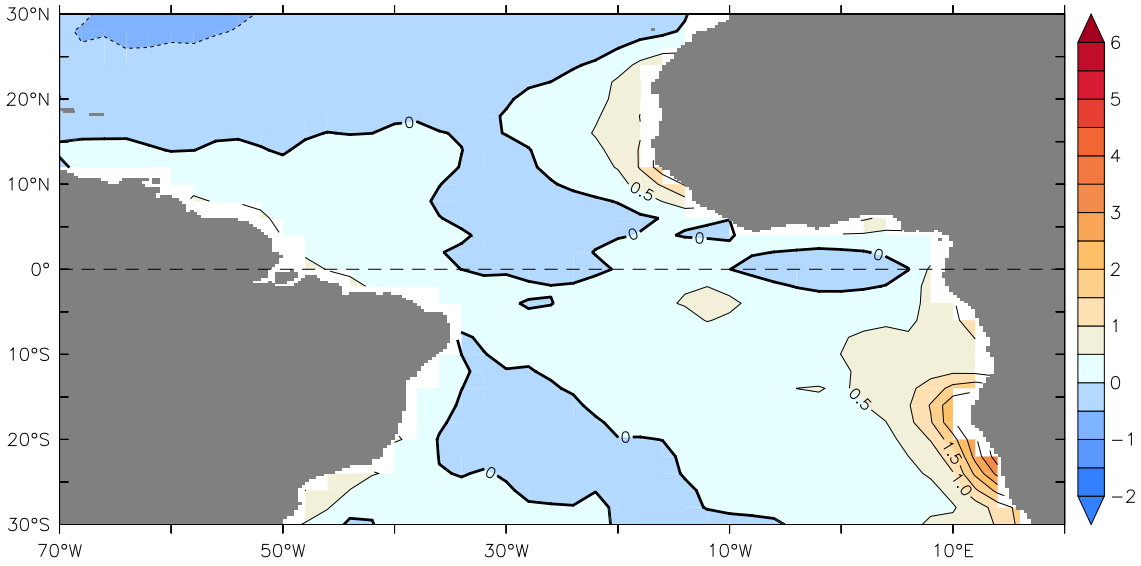


Figure 3. SST bias in EXP_OCN. The unit is °C.

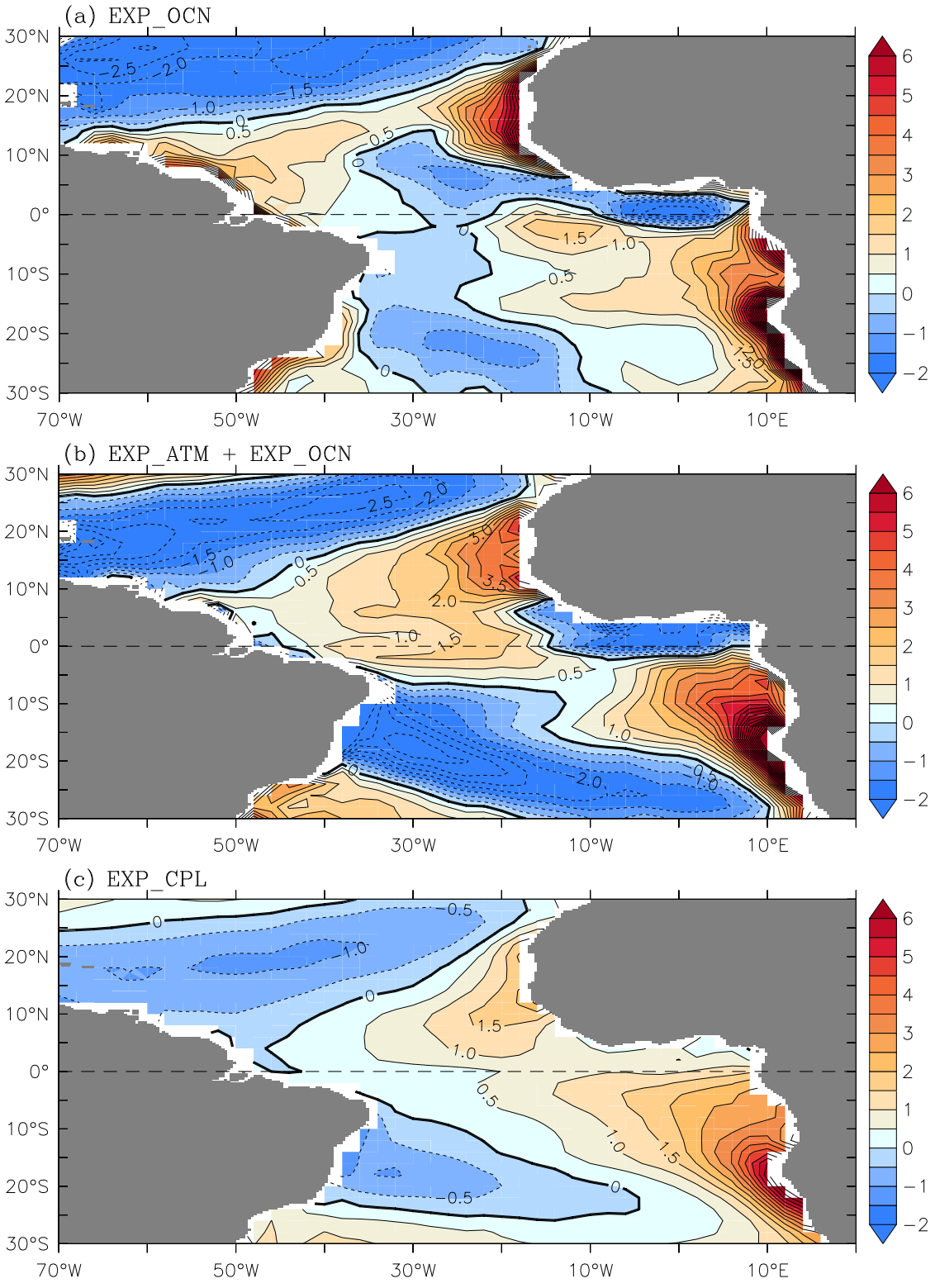


Figure 4. Annually averaged implicit SST bias in (a) EXP_OCN and (b) EXP_ATM+EXP_OCN. (c) Annually averaged SST bias in EXP_CPL. The unit is °C.

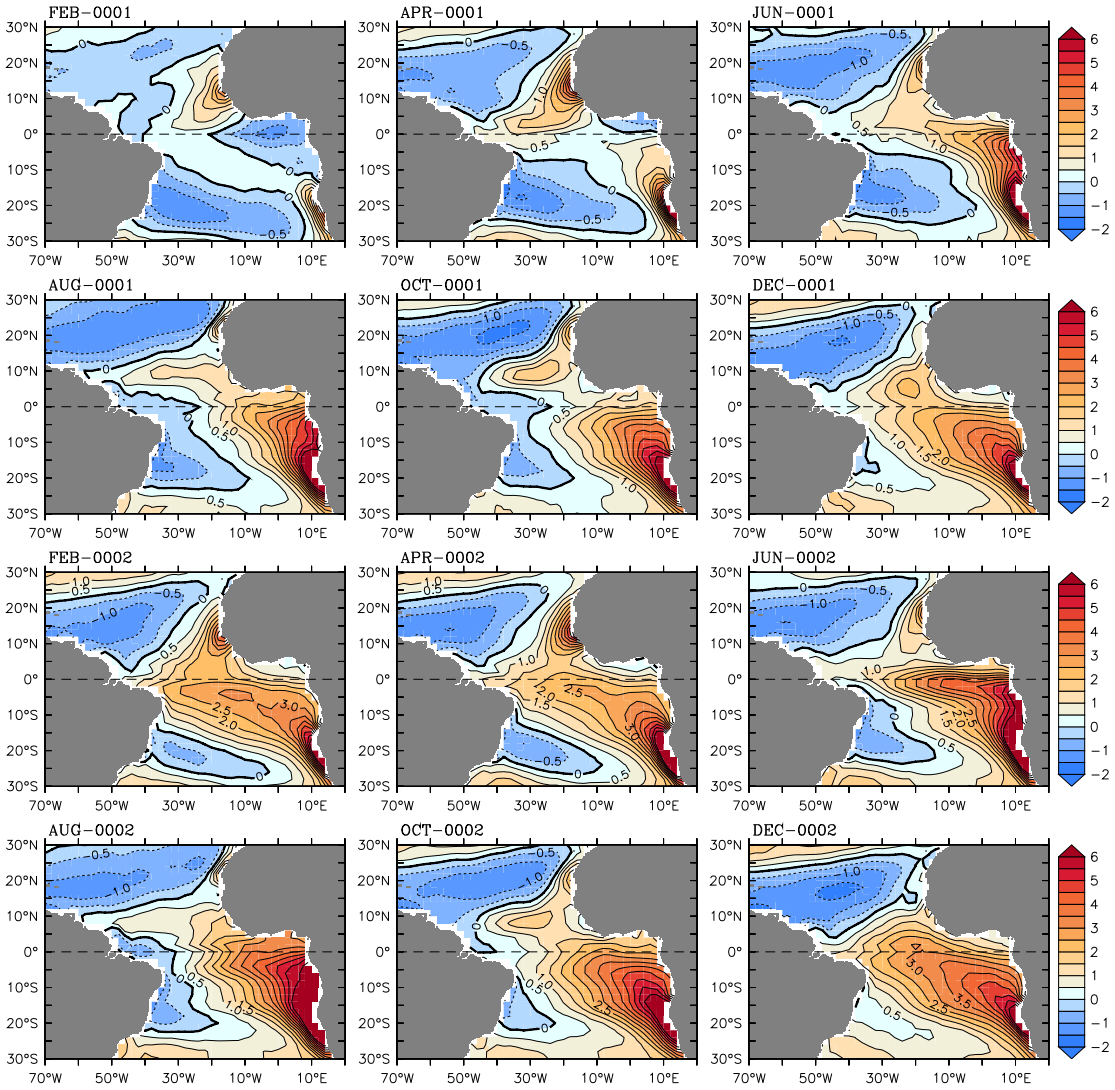


Figure 5. Evolution of SST bias in EXP_CPL during the first and second year. The unit is °C.

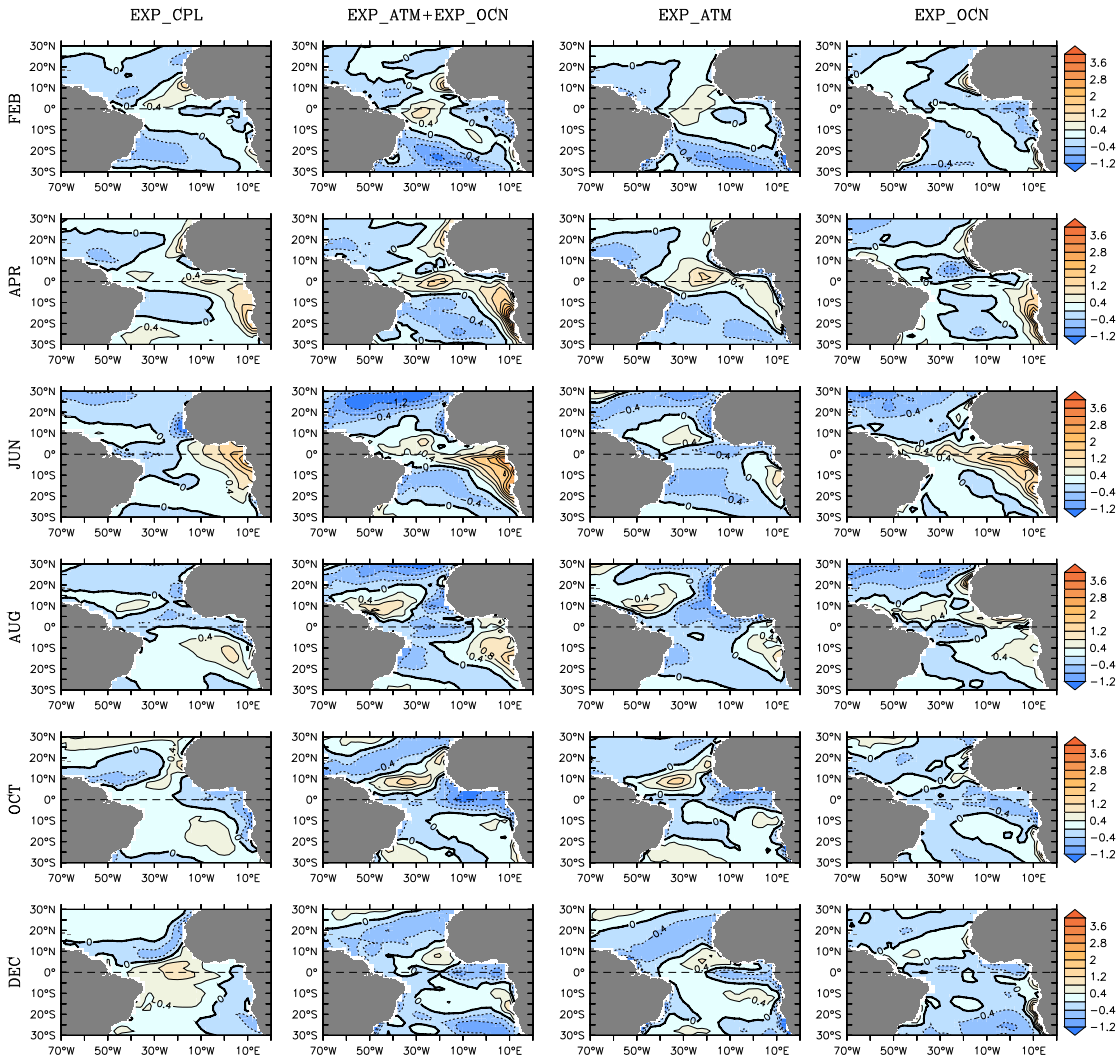
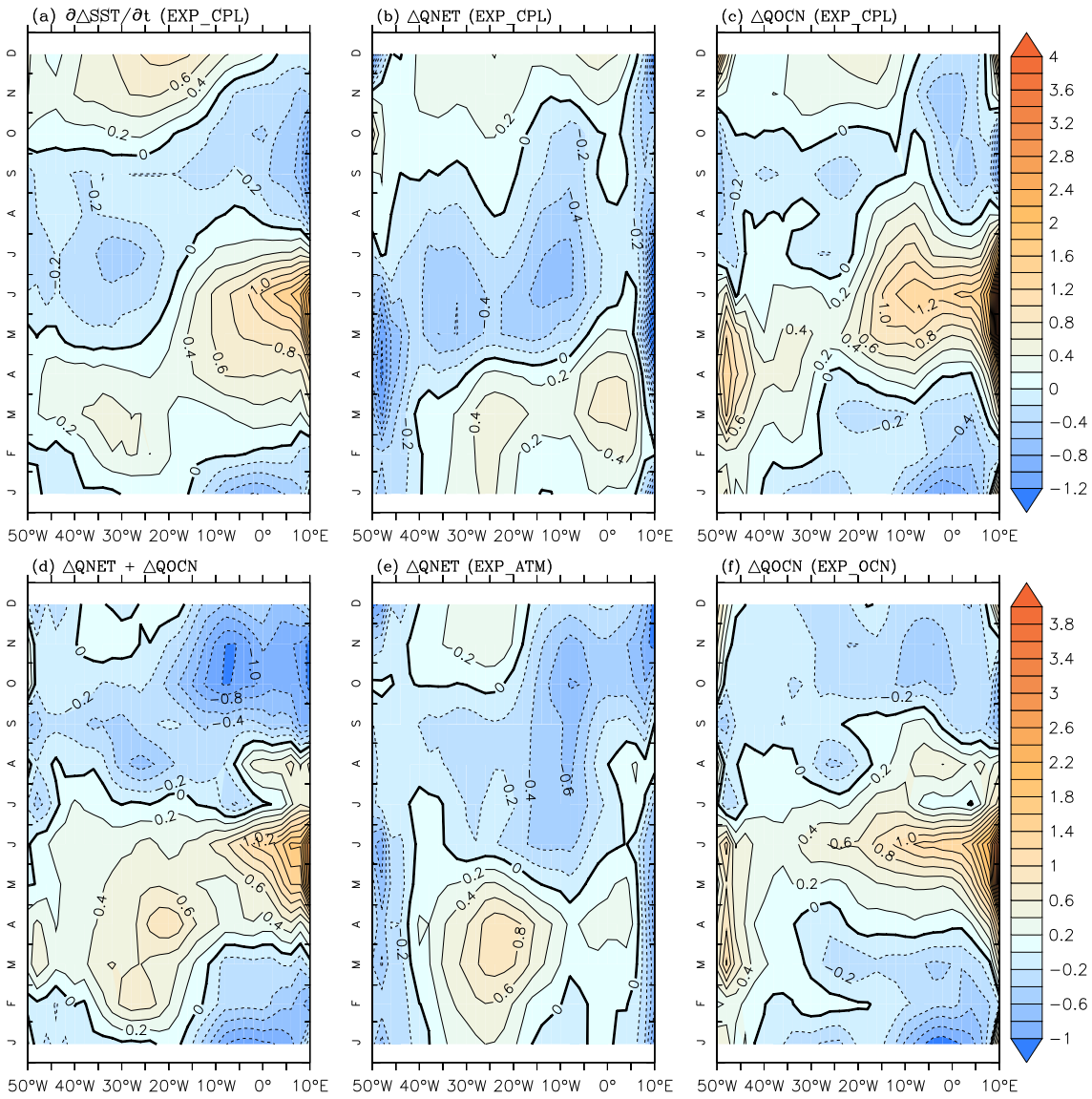


Figure 6. Evolution of SST bias tendency in EXP_CPL during the first and second year. The unit is °C month^{-1}.



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58 **Figure 7.** Time-longitude evolutions of (a) the SST bias tendencies along the equatorial Atlantic
59 and the contributions by (b) the surface heat flux errors and by (c) errors involving ocean
60 dynamic processes in EXP_CPL. Time-longitude evolutions of implicit SST bias tendencies in
61 (d) EXP_ATM+ EXP_OCN; (e) EXP_ATM; and (f) EXP_OCN.