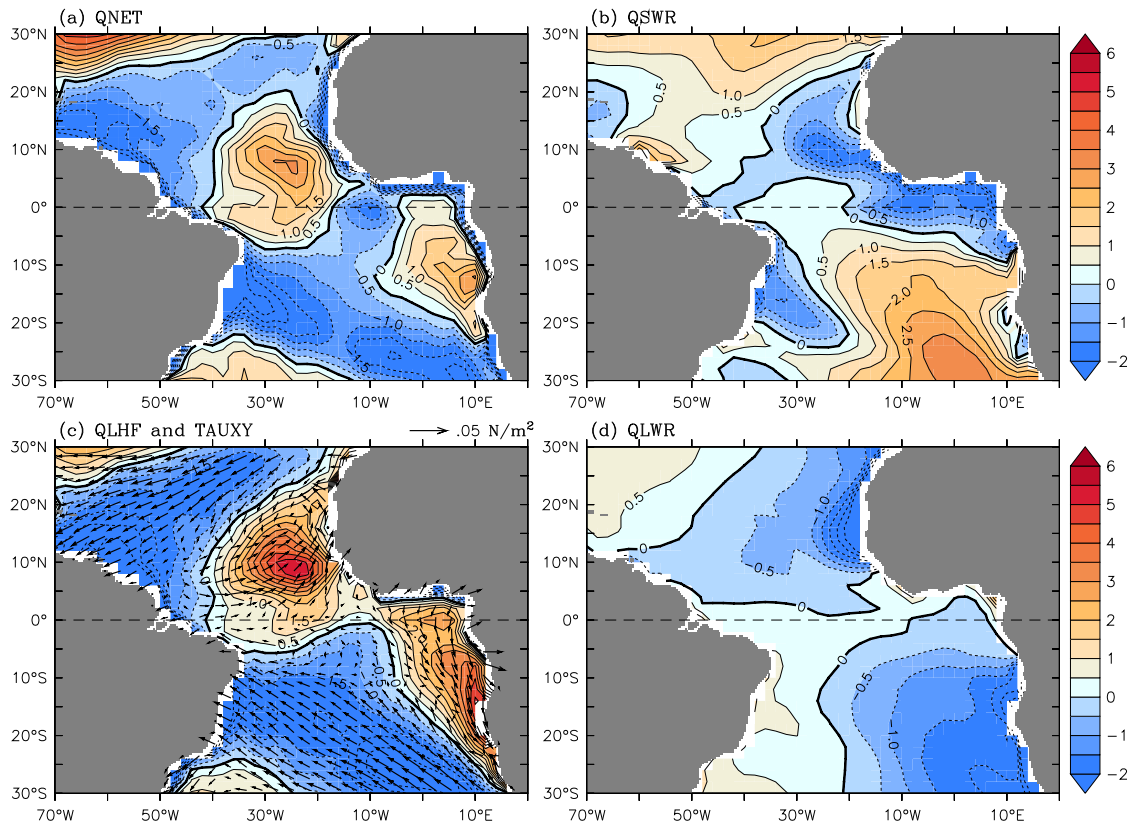


1  
 2 **Figure 1.** Annually averaged climatological SSTs in the tropical Atlantic from (a) ERSSTv3 for  
 3 1949-2005; and from (b) CCSM4 historical simulation for 1949-2005. The SST bias in CCSM4  
 4 (shaded) is also shown in (b). The unit is °C.

5  
 6  
 7  
 8



9

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

15

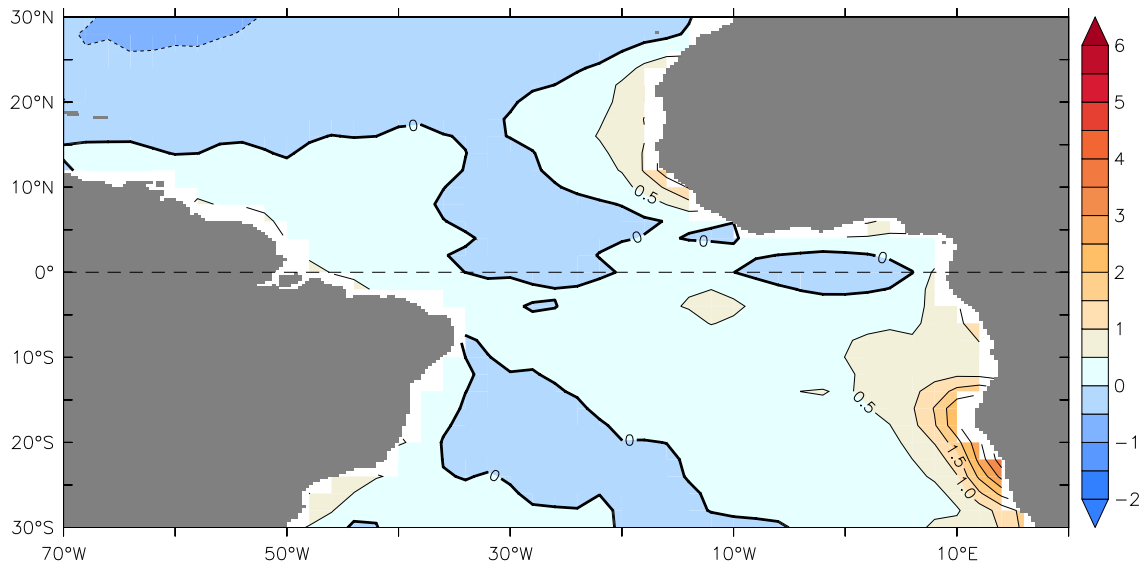
16

17

18

19

20



21

22 **Figure 3.** Annually averaged SST bias in EXP\_OCN. The unit is °C.

23

24

25

26

27

28

29

30

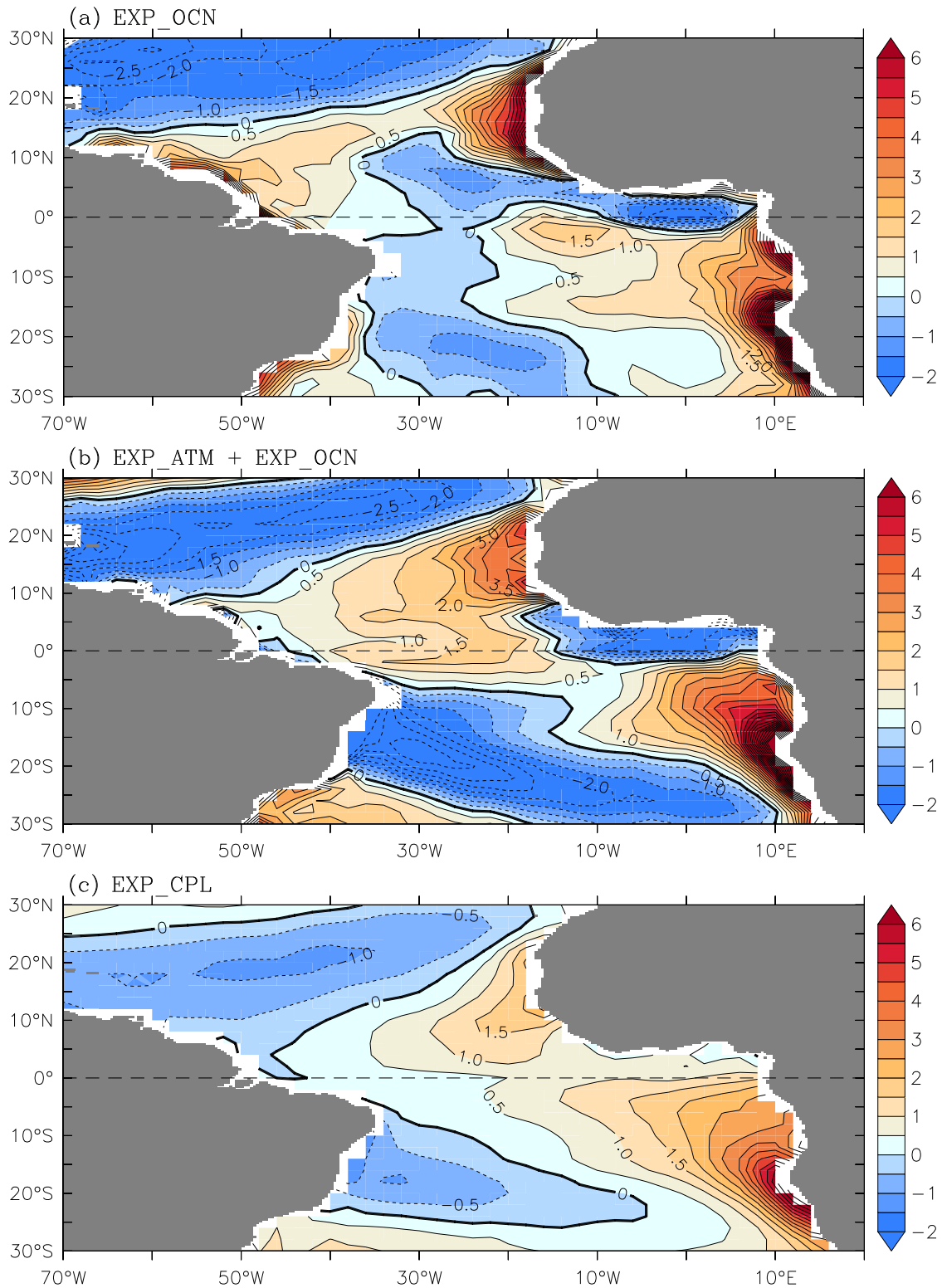
31

32

33

34

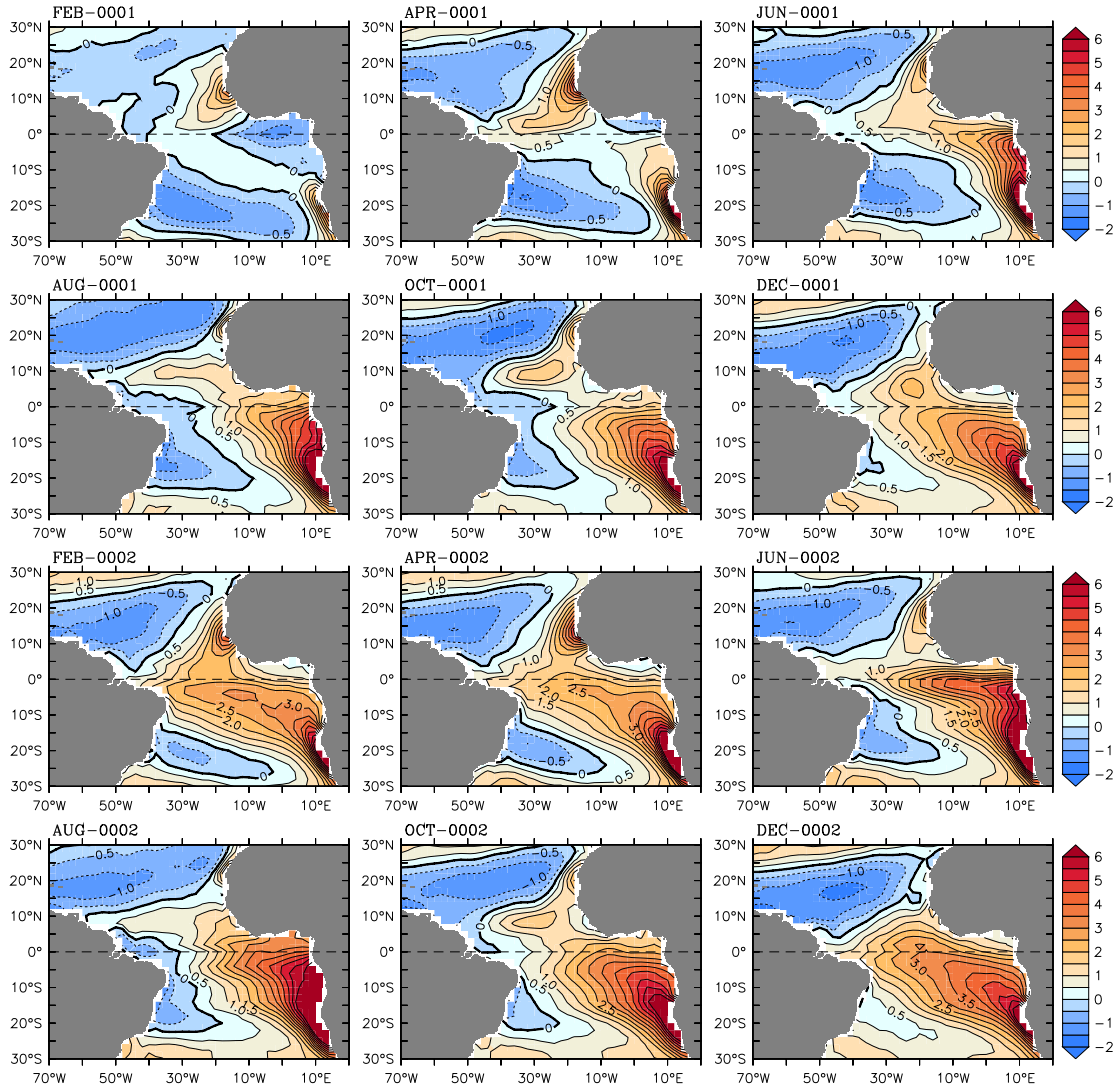
35



36

37 **Figure 4.** Annually averaged implicit SST bias in (a) EXP\_OCN and (b) EXP\_ATM +

38 EXP\_OCN. (c) Annually averaged SST bias in EXP\_CPL. The unit is °C.



39

40 **Figure 5.** Evolution of SST bias in EXP\_CPL during the first and second year. The unit is  $^{\circ}\text{C}$ .

41

42

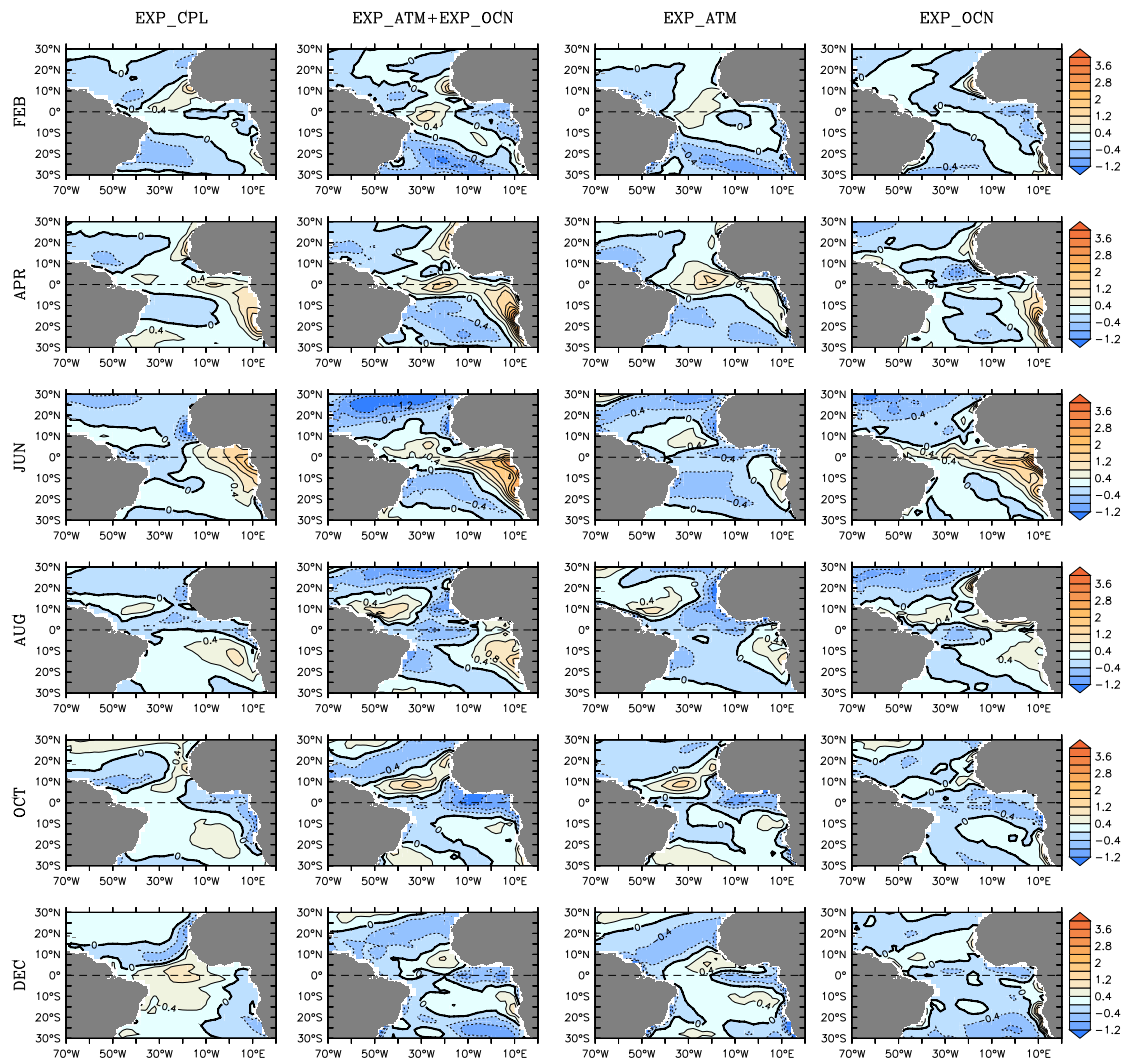
43

44

45

46

47



48

49 **Figure 6.** (1st column) Evolution of SST bias tendency in EXP\_CPL during the first year.

50 Evolution of implicit SST bias tendency in (2nd column) EXP\_ATM + EXP\_OCN, (3rd column)

51 EXP\_ATM, and (4th column) EXP\_OCN. The unit is  $^{\circ}\text{C month}^{-1}$ .

52

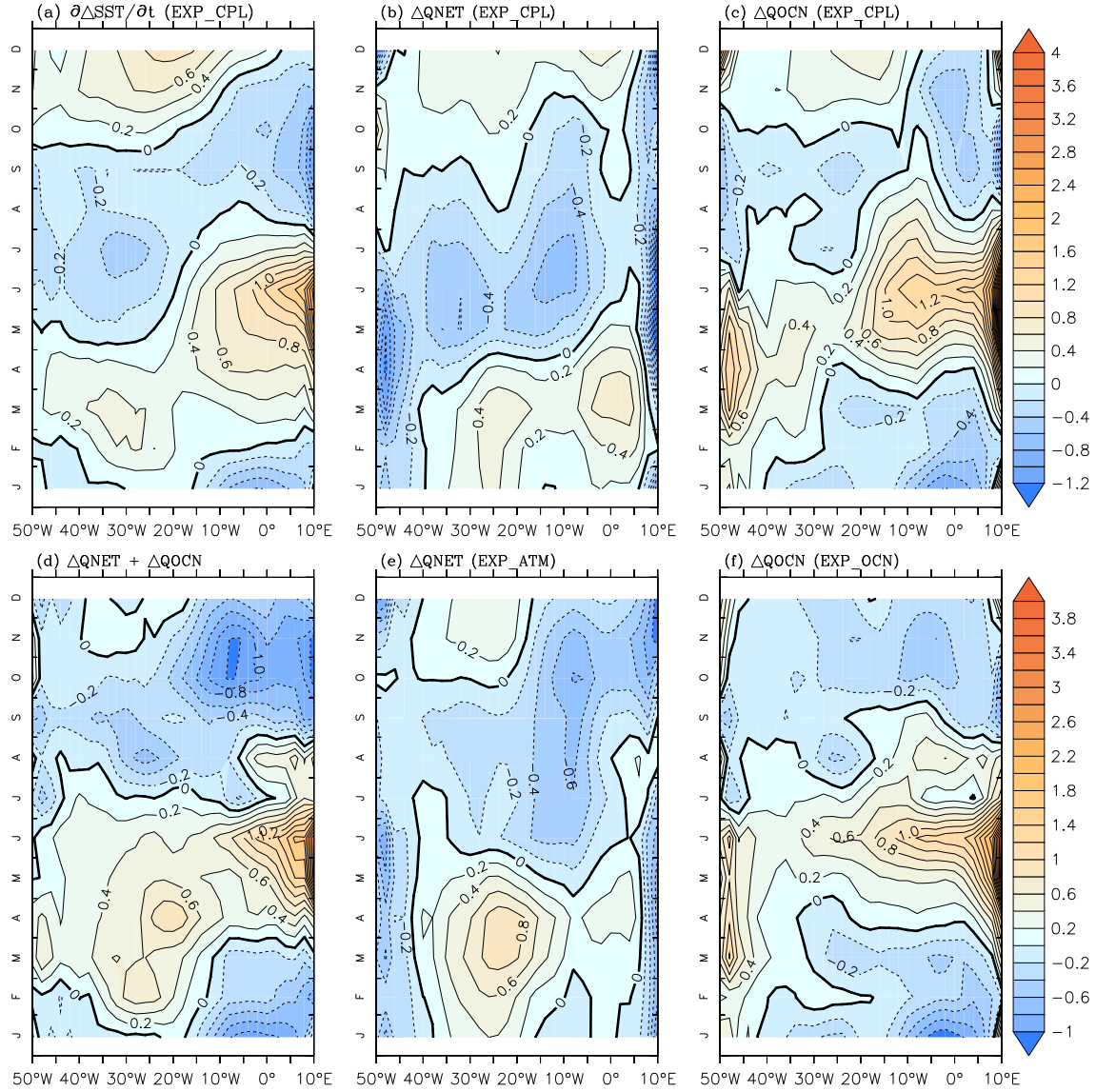
53

54

55

56

57



58

59 **Figure 7.** Time-longitude evolutions of (a) the SST bias tendencies along the equatorial Atlantic  
 60 and the contributions by (b) the surface heat flux errors and by (c) errors involving ocean  
 61 dynamic processes in EXP\_CPL during the first year. Time-longitude evolutions of implicit SST  
 62 bias tendencies in (d) EXP\_ATM + EXP\_OCN, (e) EXP\_ATM and (f) EXP\_OCN. The unit is  
 63  $^{\circ}\text{C month}^{-1}$ .