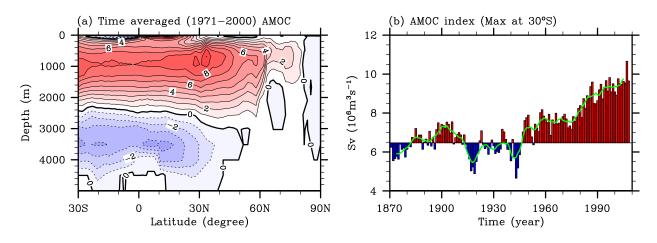
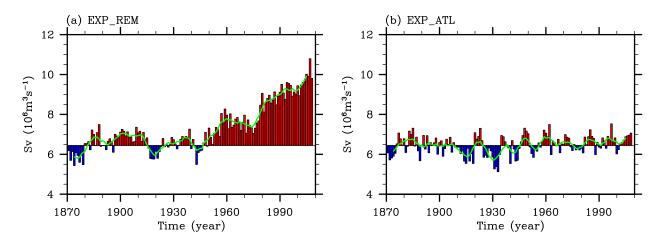


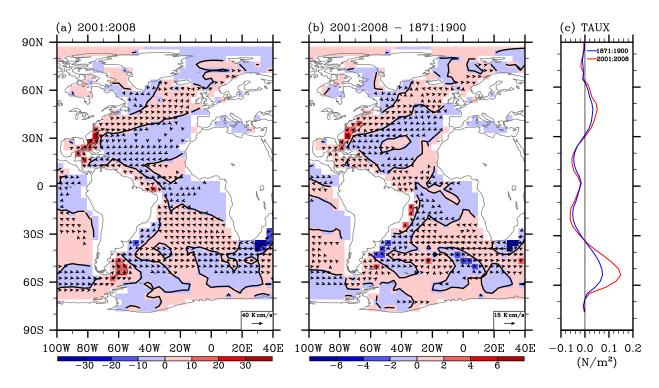
**Figure 1**. (a) Simulated Atlantic Ocean heat content change in the upper 3000m and (b) simulated northward ocean heat transport in the South Atlantic at 30°S in reference to 1870-1900 periods obtained from the three model experiments. The thick black line in (a) is the observed trend of the Atlantic Ocean heat content increase reproduced from Levitus (2000).



**Figure 2.** (a) Time-averaged AMOC during 1971-2000 and (b) time series of the simulated AMOC index (maximum overturning stream function) at 30°S obtained from EXP\_CTR.



**Figure 3.** Time series of the simulated AMOC index (maximum overturning stream function) at  $30^{\circ}$ S obtained from (a) EXP\_REM and (b) EXP\_ATL.



**Figure 4**. (a) Simulated pathways of the northward heat transport (contours) and heat transport vector (vectors) averaged in the upper 3000 m for 2001-2008, obtained from EXP\_CTR. The unit is K·cm/sec. (b) Differences in the simulated northward heat transport (contours) and heat transport vector (vectors) between 2001-2008 and 1871-1900 periods, obtained from EXP\_CTR. (c) Globally averaged zonal wind stress for 1871-1900 and for 2001-2008 periods, obtained from the 20CR.