

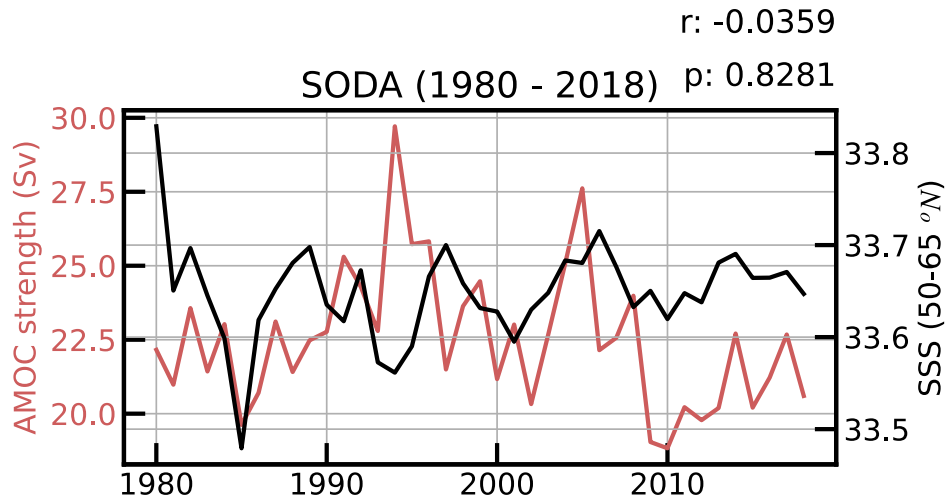


Figure 1. Time series of AMOC strength and SPNA SSS. The SODA data is yearly averaged from 1980 to 2018. Red line shows the AMOC strength variability. The correlation coefficient and p-values both show no correlation between them.

Table 1. The models analyzed in this study, the institute that contributed them, dimensions of them.

Model	Full model name	Institute	Ocean dimensions
ACCESS-ESM1-5	The Australian Community Climate and Earth System Simulator (ACCESS)	CSIRO Oceans and Atmosphere	360 × 300 × 50
AWI-ESM-1-1-LR	Alfred Wegener Institute Earth System Model, version 1, Low Resolution	Alfred Wegener Institute for Polar and Marine Research	unstructured grid in the horizontal with 126859 wet nodes; 46 levels
CESM2	Community Earth System Model, version 2	National Center for Atmospheric	320 × 384 × 60

		Research (NCAR)	
EC-Earth3-LR	European Centre Earth System Model, version 3, Low Resolution)	European Centre for Medium-Range Weather Forecasts (ECMWF)	360 × 292 × 75
FGOALS-f3-L	Flexible Global Ocean – Atmosphere – Land System (FGOALS-f3-L)	Institute of Atmospheric Physics, Chinese Academy of Sciences (CAS)	360 × 218 × 30
FGOALS-g3	Flexible Global Ocean-Atmosphere-Land System Model, version g3	Institute of Atmospheric Physics, Chinese Academy of Sciences (CAS)	360 × 218 × 30
GISS-E2-1-G	Goddard Institute for Space Studies Earth System Model, version 2.1, Grid version	NASA Goddard Institute for Space Studies (GISS)	360 × 180 × 40

IPSL-CM6A-LR	Institut Pierre Simon Laplace Climate Model, version 5A, Low Resolution	Institut Pierre Simon Laplace (IPSL)	362 × 332 × 75
MIROC-ES2L	Model for Interdisciplinary Research on Climate, Earth System version 2, Low-resolution	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	360 × 256 × 63
MPI-ESM1-2-LR	Max Planck Institute Earth System Model, Version1.2 Low Resolution	the Max-Planck- Institute for Meteorology in Hamburg (MPI)	256 × 220 × 40
MRI-ESM2-0	Meteorological Research Institute Earth System Model, version 2.0	Meteorological Research Institute, Japan	360 × 364 × 61
NESM3	Northeast Normal University Earth System Model, version 3	Northeast Normal University, China	384 × 362 × 46

NorESM2- LM	Norwegian Earth System Model, version2, Low Resolution	Norwegian Climate Centre (NCC)	360 × 384 × 70
----------------	--	--------------------------------------	----------------