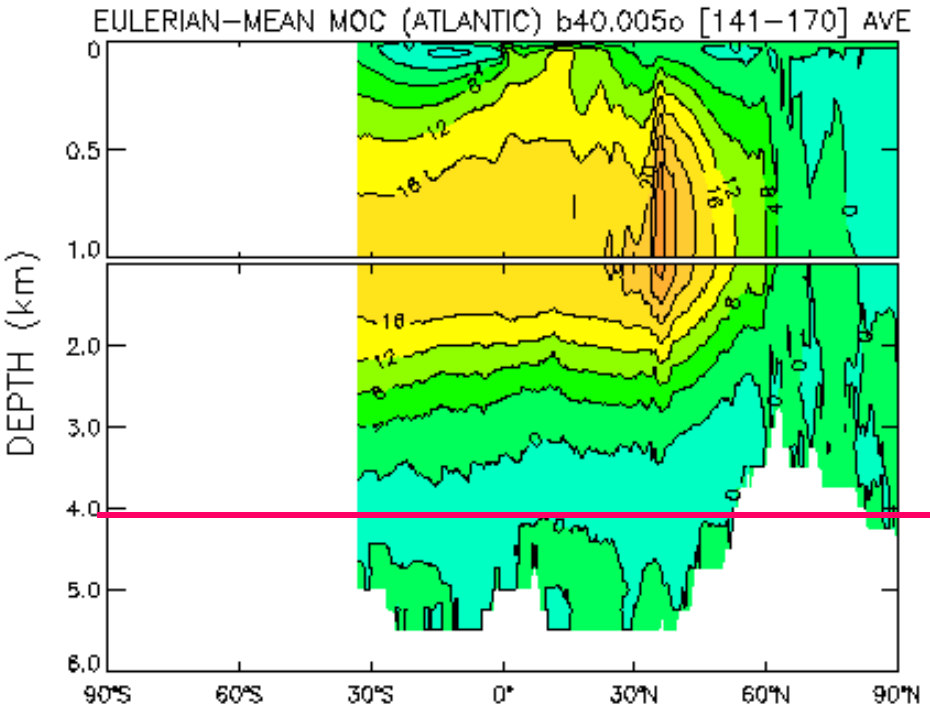
WHAT IS NEW IN THE CCSM4 OCEAN COMPONENT?

(since CCSM3)

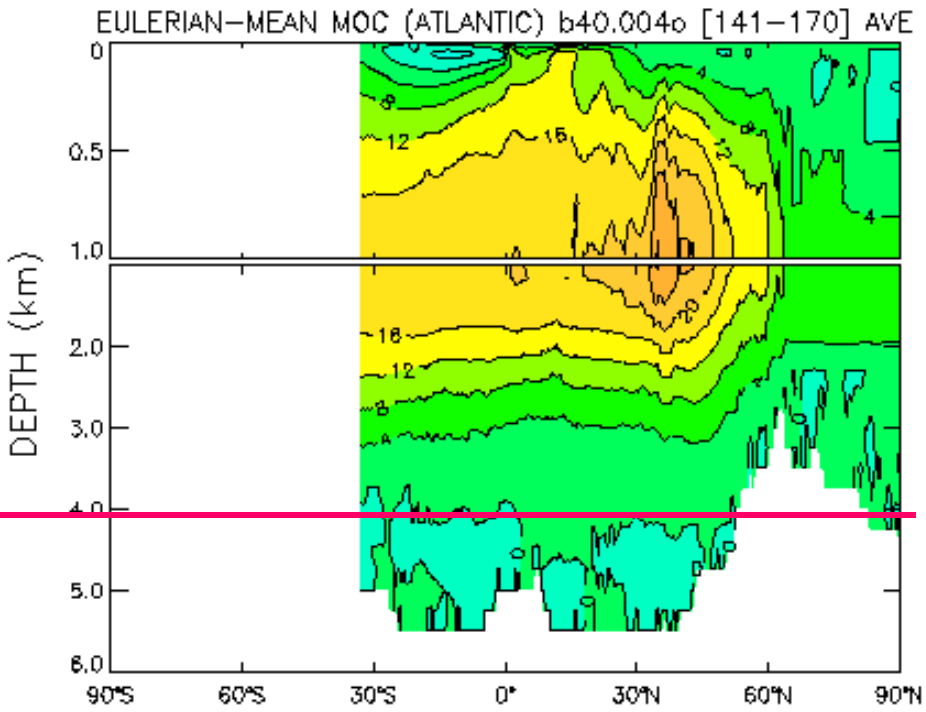
- POP2 base code, including many infrastructure changes,
- Increased vertical resolution (60-levels) and changes in bottom topography,
- Modified anisotropic horizontal viscosity scheme,
- Tidally driven mixing scheme,
- Horizontally-varying internal wave breaking, i.e., background, vertical diffusivity / viscosity,
- Near-surface eddy flux parameterization, (CPT)
- Vertically-varying isopycnal and thickness diffusivities, (CPT)
- Sub-Mesoscale parameterization, (CPT)
- Overflow parameterization. (CPT)

ATLANTIC MERIDIONAL OVERTURNING CIRCULATION (Sv)

CONTROL



WITH OVERFLOWS

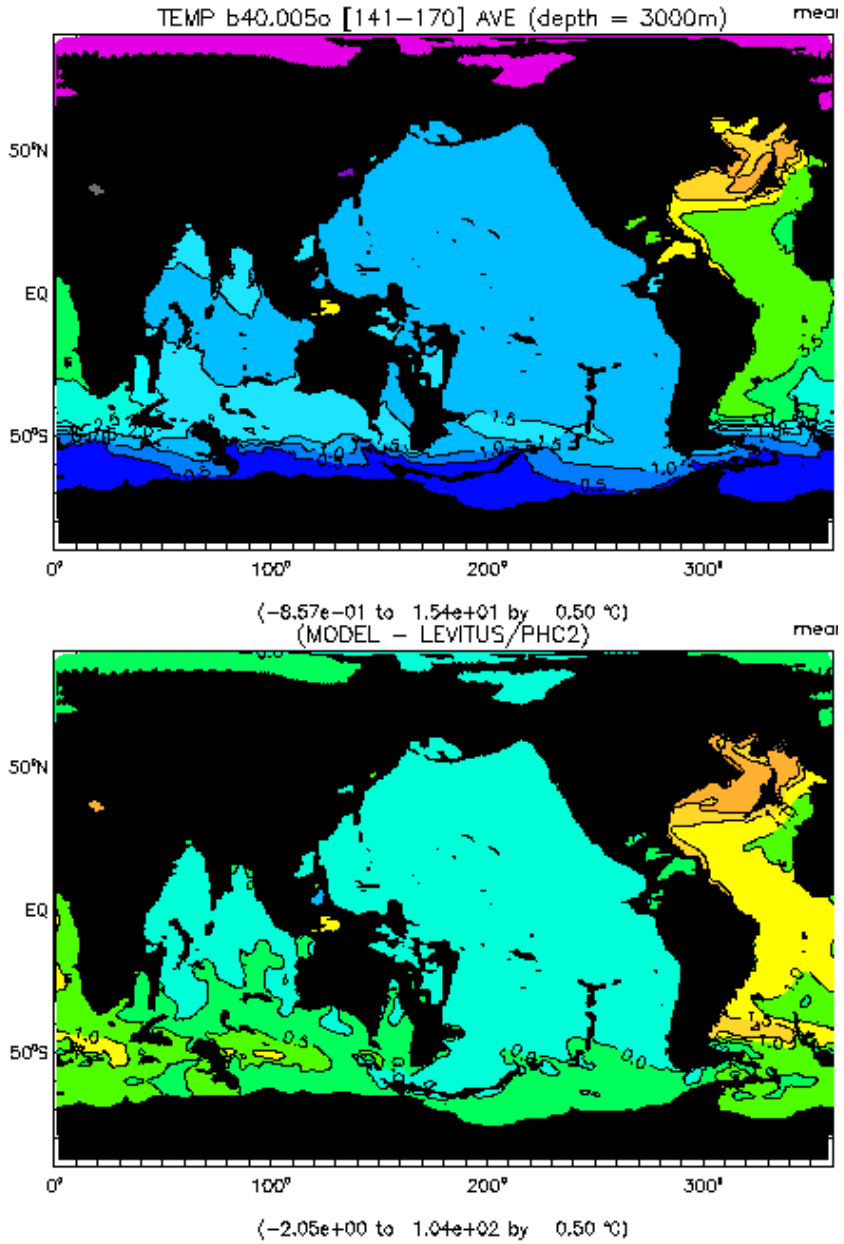


Denmark Strait and Faroe Bank Channel overflows are parameterized.

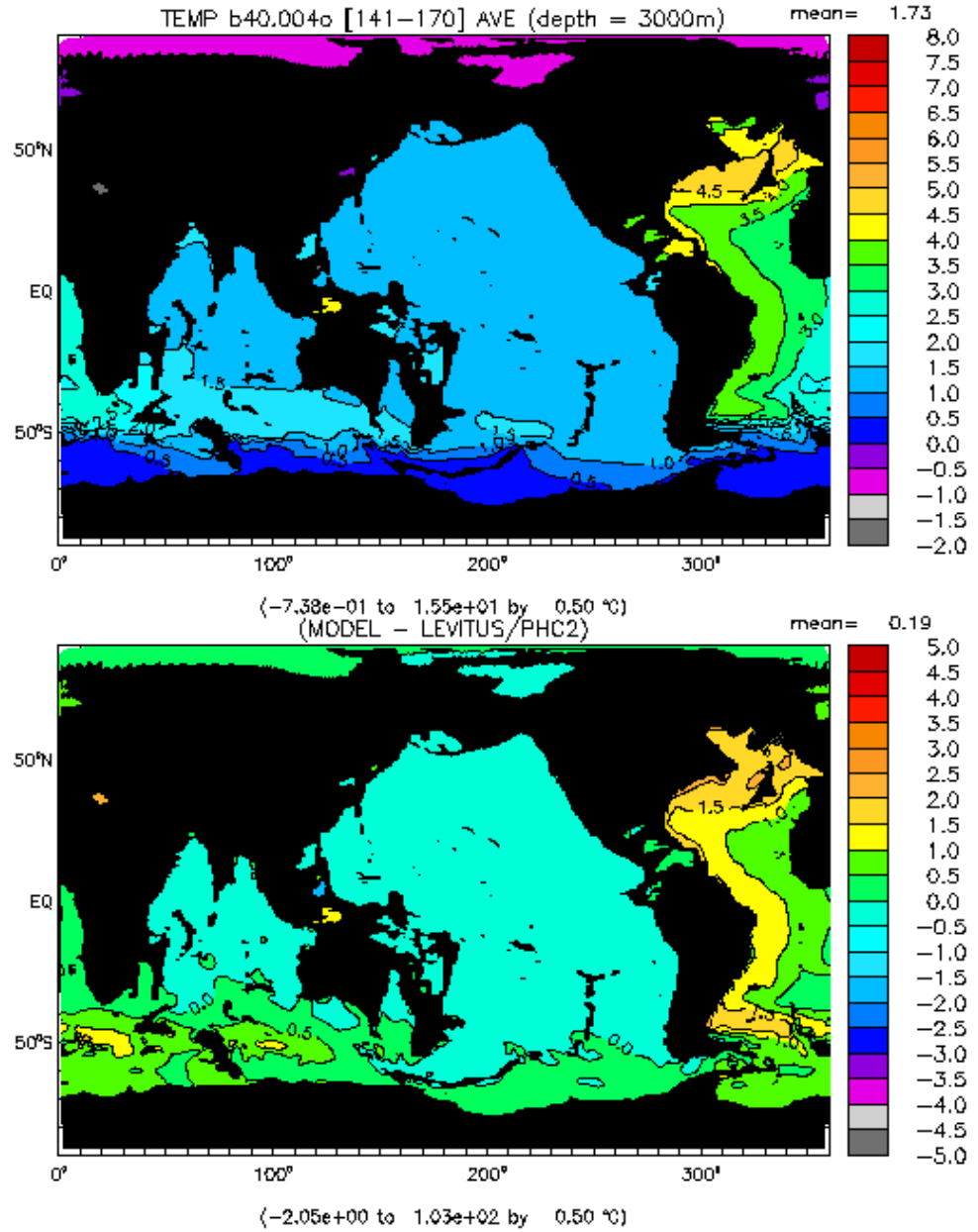
The plots represent 30-year means from two fully-coupled CCSM4- integrations.

POTENTIAL TEMPERATURE AT 3000 m DEPTH (°C)

CONTROL

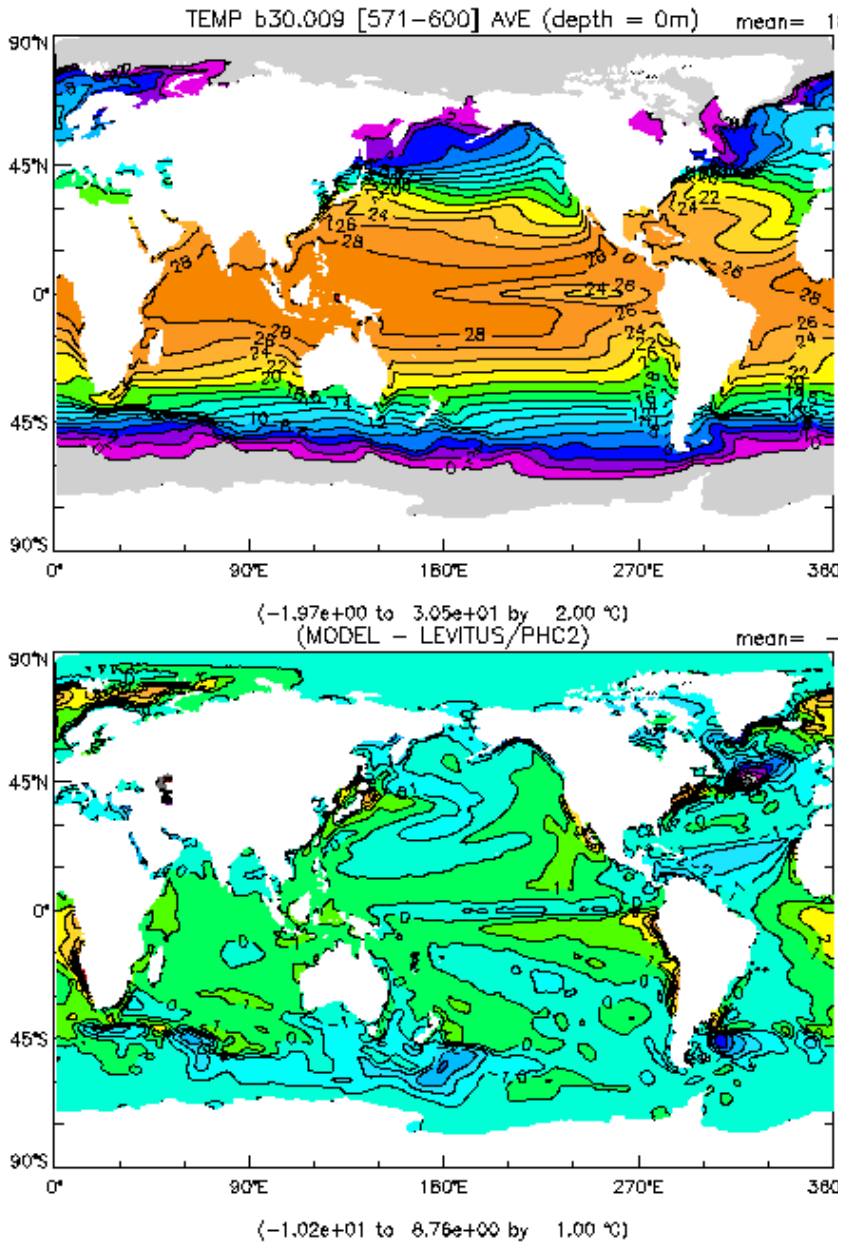


WITH OVERFLOWS

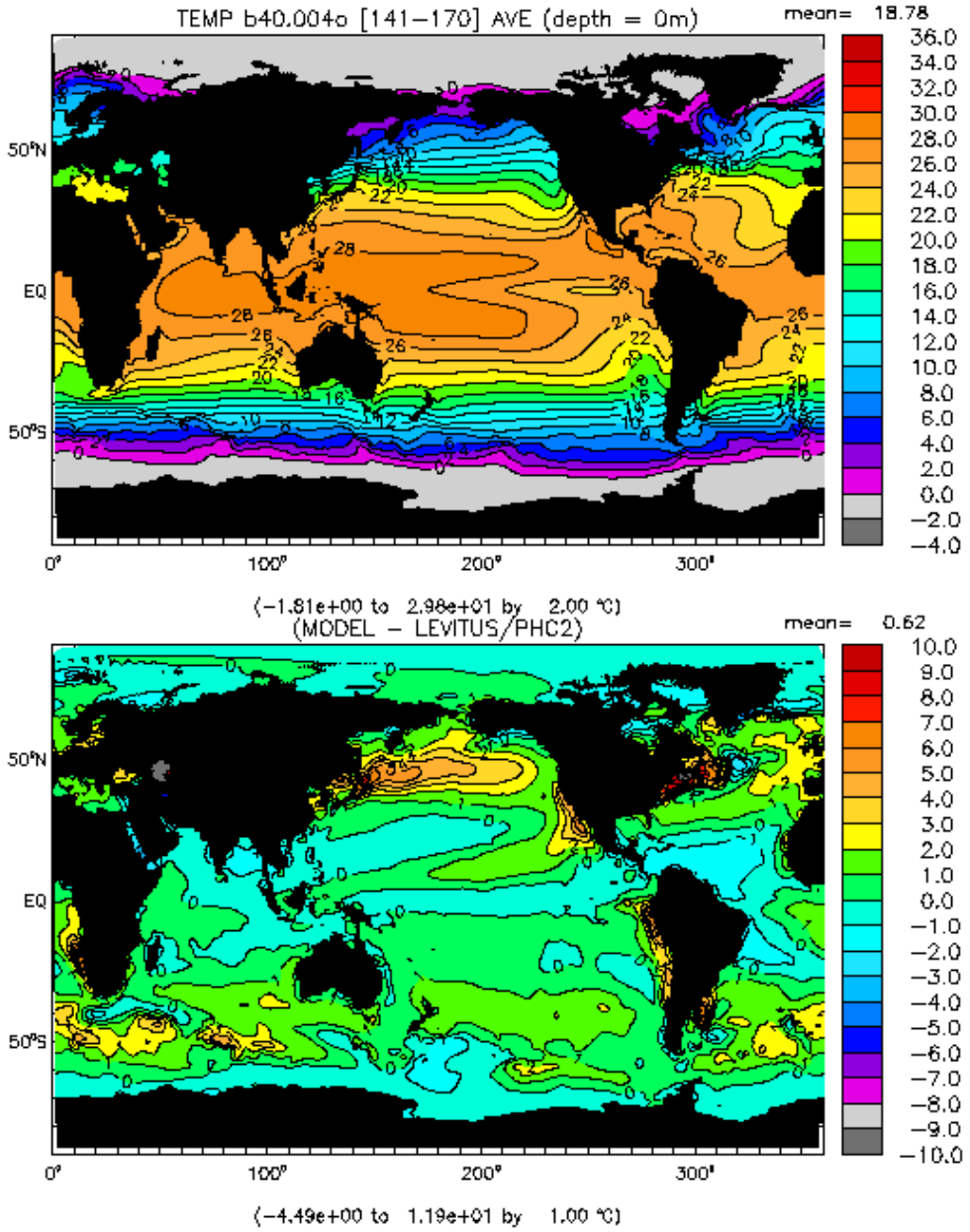


SEA SURFACE TEMPERATURE (°C)

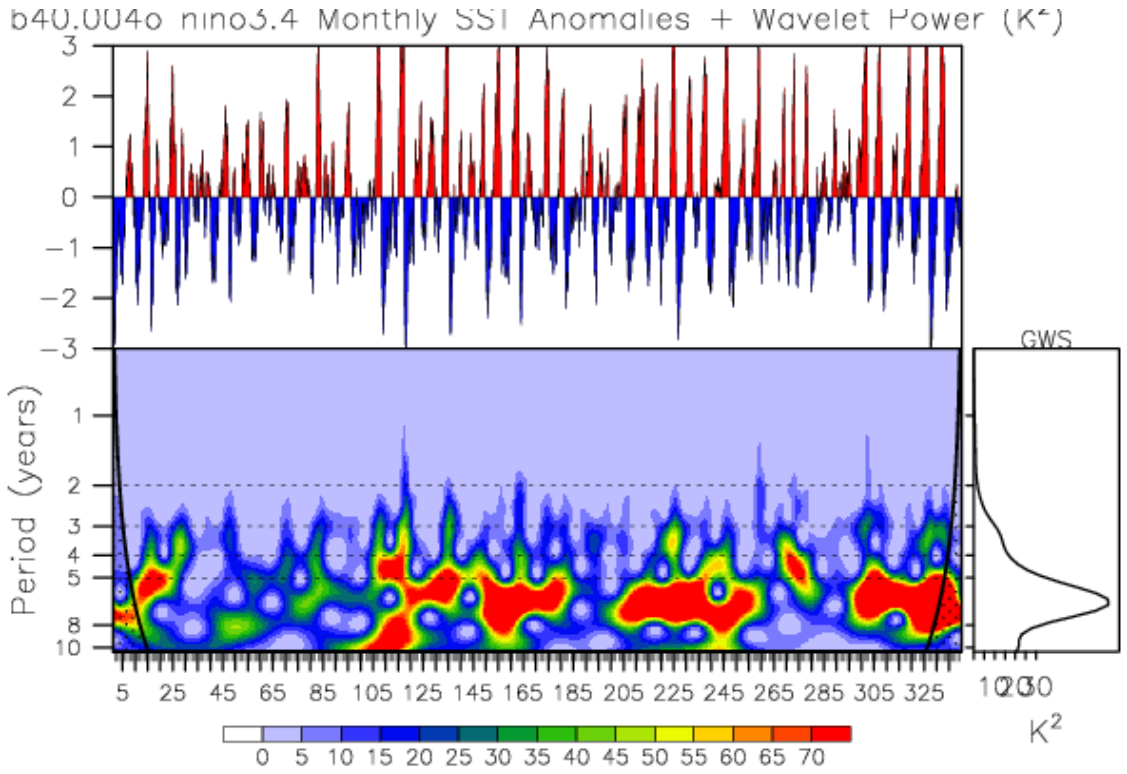
CCSM3

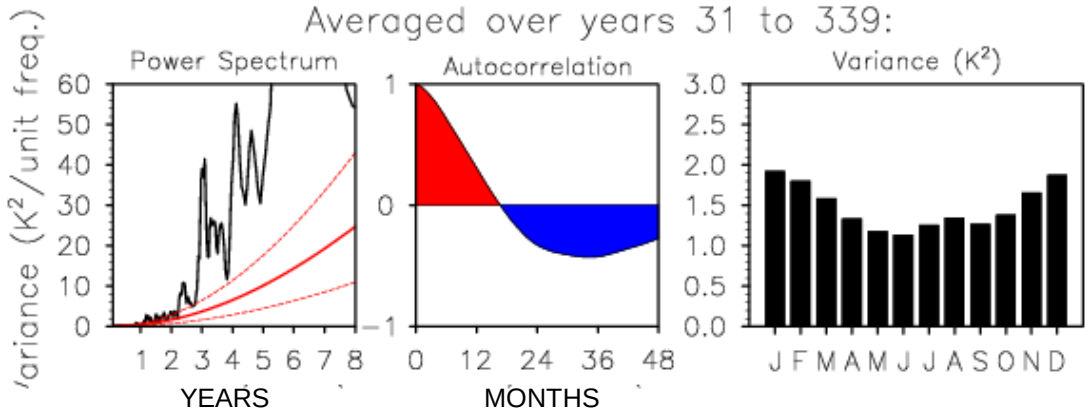


CCSM4-



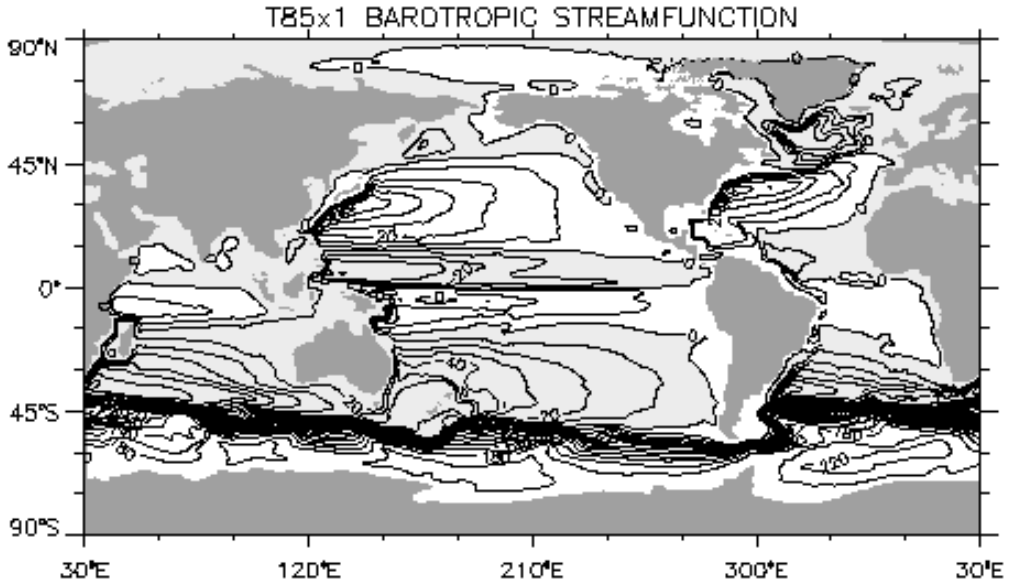
NINO 3.4 SST CHARACTERISTICS





VERTICALLY-INTEGRATED (BAROTROPIC) STREAMFUNCTION (Sv)

CCSM3



CCSM4-