

21014 US AMOC Science Team Meeting

AMOC's multidecadal variability led to the current hiatus in global warming

ABSTRACT

We show observational evidence that the current hiatus in global warming since 1999 was caused by an increase in ocean heat content sequestration below 700m. It was likely initiated by a multidecadal switch of salinity regime in the subpolar regions of the North Atlantic Ocean. The increase in salinity is correlated with an increase in vertical ocean heat content penetration in both space and time. During the previous 30 years, when global warming at the surface was accelerating, there was also a covariation in the North Atlantic salinity and ocean heat content, but both were in the negative direction. Therefore it appears that during the last three decades of the 20th century the heat from anthropogenic radiative forcing stayed mainly near the surface, leading to enhanced surface warming, while in the beginning of the 21st century, more heat is sequestered deeper in the North and South Atlantic, due to the multidecadal variation in the thermohaline part of the AMOC.