Joke
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Oral
Temperature and salinity trends in the subsurface tropical-to-subtropical Atlantic Ocean are analyzed from Argo profiles for the time period 2006 to 2019. They show distinct patterns, in particular in the isopycnal and latitudinal ranges of the Atlantic central waters.

Previous studies have suggested a connection between tropical Atlantic surface and subsurface temperature changes and the strength of the Atlantic meridional overturning circulation (AMOC; e.g. Chang et al., 2008). RAPID array measurements at 26ºN suggest that the AMOC weakened since about 2008 (Smeed et al., 2018) and some studies argue that this trend is part of a longer-term decline over the recent decades (e.g. Caesar et al., 2018).

We here assess the link between the observed water mass changes and the AMOC decline with a high-resolution ocean model experiment in which the AMOC was artificially weakened by means of a fresh water perturbation around Greenland. The experiment shows temperature and salinity changes similar to the observed ones. Time scales of the response and further implications will be discussed.
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