What can Hydrography between New York and Bermuda tell us about the strength of the AMOC over the last century?

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All water flowing north in the North Atlantic must on average do so via the Gulf Stream because everywhere else water is flowing south at all depths. Here we apply the dynamic method to estimate AMOC transport change on the very longest time scales of observation between the continental slope and Bermuda. This approach removes Gulf Stream transport associated with the southern and northern recirculation gyres leaving only the upper ocean AMOC and wind-driven transports. Given 1000 m as the depth of AMOC transport maximum we estimate AMOC transport today to be 18.2 ±0.6 Sv with an estimated 2.5 ± 1.2 Sv decrease since the 1930s due to increased warming in the Slope Sea. We hypothesize that this reflects reduced outflow from the north allowing for increased entrainment of warm Gulf Stream water at the Tail of the Grand Banks. Because contemporaneous records of the densest component of the AMOC appear to be stable, we attribute this AMOC decrease to a reduced overturning in the subpolar North Atlantic, rather than stemming from the Nordic Seas. In other words, the slowdown occurs in the shallow overturning limb not the deep overturning limb.