

# CGD Seminar Series

## A stable Atlantic Meridional Overturning Circulation in a changing North Atlantic Ocean since the 1990s

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**Date:** Tuesday 30 November 2021

**Time:** 11am – 12pm

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For live stream information, visit the  
CGD Seminar Webpage

### ABSTRACT

The Atlantic Meridional Overturning Circulation (AMOC) is crucially important to global climate. Model simulations suggest that the AMOC may have been weakening over decades. However, existing array-based AMOC observations are not long enough to capture multidecadal changes. Here, we use repeated hydrographic sections in the sub-tropical and subpolar North Atlantic, combined with an inverse model constrained using satellite altimetry, to jointly analyze AMOC and hydrographic changes over the past three decades. We show that the AMOC state in the past decade is not distinctly different from that in the 1990s in the North Atlantic, with a remarkably stable partition of the subpolar overturning occurring prominently in the eastern basins rather than in the Labrador Sea. In contrast, profound hydrographic and oxygen changes, particularly in the subpolar North Atlantic, are observed over the same period, suggesting a much higher decoupling between the AMOC and ocean interior property fields than previously thought. Further investigations are underway to deepen our understanding of the decoupling.

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