



An analysis of the reduced overturning state of the North Atlantic observed by the RAPID-MOCHA-WBTS array

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Since 2008 the AMOC, as observed by the RAPID-MOCHA-WBTS array has been about 2.7 Sv less than during the first 4 years of observation (2004-2007). There has been no significant long-term change in the Ekman transport, and about 20% of the reduction is accounted for by the flow in the Florida Straits. Almost all of the change has occurred in the non-Ekman flow east of the Bahamas. Analysis of temperature and salinity data from moorings in the western boundary, the mid-Atlantic Ridge and the eastern boundary show that most of the change can be attributed to changes on the western boundary. Roughly 60% of the AMOC reduction is driven by changes in and above the thermocline and 40% is associated with changes below the thermocline. The changes also shed light on the mechanism of the AMOC reduction.