



## **Role of the Antilles Current in the Atlantic Meridional Overturning Circulation variability at 26.5N**

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Recent observations of the Atlantic Meridional Overturning Circulation (AMOC) at 26.5 N have shown strong variations of the AMOC on interannual time scales as well as the suggestion of a longer term decline of the circulation. Here, we relate the interannual variations in the strength of the AMOC to the Antilles Current (AC), a western-intensified boundary current east of the Bahamas.

Using 8.5 years of moored observations from the RAPID array at 26.5°N as well as output from a high resolution ocean simulation (NEMO 1/12°), we investigate the interannual variability in the AC as well as the spatial structure in density and wind stress curl (WSC) east of the Bahamas.

Comparing the WSC forcing to the AC transport, we find that on interannual time scales, the zonally integrated WSC leads the AC by 2.5 years in the observations. Separating the upper mid-ocean transport into the northward flowing AC and southward flowing gyre east of the AC, we are able to attribute the downturn of the MOC in 2009/2010 as associated with a weakening of the AC rather than with the gyre recirculation.