



**National Oceanography
Centre, Southampton**
UNIVERSITY OF SOUTHAMPTON AND
NATURAL ENVIRONMENT RESEARCH COUNCIL

RAPID PEER-REVIEWED PUBLICATION

TITLE: Temporal variability of the Atlantic Meridional Overturning Circulation at 26.5°N

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NON-TECHNICAL SUMMARY OF WORK*:

This paper analyses the first year's continuous measurement of the Atlantic Meridional Overturning Circulation (MOC) strength, incorporating in-situ observations from the RAPID 26°N moorings. Observations are available from 28th March 2004 – 31st March 2005. Analysis of these data shows that during this period:

- the annual mean MOC strength was 18.7Sv (1Sv = 10⁶m³ flow of water per second)
- the accuracy of this annual mean can be measured within ±1.5Sv
- the standard deviation (indicating the day-to-day variability of strength around this annual mean) was 5.6Sv
- the *range* of MOC strength throughout the time period was from 4.4Sv (February 2005) to a 35.3Sv maximum (September 2004)

This range of observed daily MOC strength envelopes the 5 observed MOC strengths reported by Bryden et al. 2005 (Nature). This suggests that implied long-term trends based on these 5 observations may be an artefact of the natural, intra-annual, variability of the system. Further data (i.e. an extended time series) are needed to investigate this possibility.

The ability to measure the annual mean MOC strength within 1.5Sv is particularly encouraging - allowing for accurate measurement of the inter-annual variability (and thus the identification of any long-term trends) of the system as subsequent years' data are added to the time series.

ANTICIPATED PRESS INTEREST/PLANNED PRESS ACTIVITIES:

To be advised

* What has been done? What are key results/implications? Please limit to one or two paragraphs and, avoid excessive technical language.