Boundary Current measurements at 34.5°S in the South Atlantic: Preliminary results of MOC-related variability

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Abstract:
The first direct estimates of the temporal variability of the absolute transports of the shallow and deep boundary currents at the western and eastern boundaries along 34.5°S in the South Atlantic Ocean are obtained using just under one year of overlapping data from two small arrays of pressure-equipped inverted echo sounders deployed on the western and eastern continental slopes. Hydrographic sections collected in the regions of the two arrays confirm the presence of the Brazil Current and the Deep Western Boundary Current (DWBC) in the west, and the Benguela Current and a deep southward flow near the eastern boundary. These deep flows represent pathways of the cold lower limb of the Meridional Overturning Circulation (MOC), while the warm upper limb of the MOC is believed to be carried primarily in the Benguela Current and in Agulhas rings at this latitude. Preliminary analyses of the data from these two arrays will be presented, and the observed results will be compared to the output of a high-quality global numerical model.