

2004 Ocean Sciences Meeting Search Results

Cite abstracts as *Eos Trans. AGU*, 84(52),
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Your query was: pickart

HR: 0830h

AN: OS21F-08

TI: Boundary Current System at 52W in the North Atlantic

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AB: In July/August of 1997, a hydrographic/ADCP/tracer section was occupied nominally along 52W in the North Atlantic, as part of the WOCE Hydrographic Program. This line crossed the complex suite of northern boundary currents lying on the west side of the Grand Banks of Newfoundland, and sheds some light on circulation features in this region. Waters flowing along the continental boundary arrive here from the subpolar North Atlantic (specifically the Labrador Sea) only after successfully negotiating the Banks and encountering the North Atlantic Current; it is still a subject of speculation to what extent the subpolar gyre extends westward in the North Atlantic. Using both lowered and shipboard ADCP data to reference geostrophic shears, and then applying a simple inverse model we have obtained an internally consistent absolute velocity field that balances mass transport for the section as a whole. This velocity field, in conjunction with the dissolved oxygen and chlorofluorocarbon distributions, presents a detailed view of the currents and suggests that both the Labrador Current and the Deep Western Boundary Current are continuous along the boundary. Together they carry 29.5 Sv westward (equatorward), remarkably close to the transport found by previous investigators to be the total throughput of the equatorward flowing boundary current system in the Labrador Sea. Transport subdivided into four different water masses is also in good agreement with similar observations to the west, along 55W. In addition, there is a substantial Slopewater current flowing eastward over the 3000m isobath.

DE: 4528 Fronts and jets

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