



Westward flow of Weddell Sea Bottom Water through Drake Passage

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During the Polarstern cruise ANT XXIII-3 (2006) an enlarged chlorofluorocarbon (CFC) signal was found in the southern part of Drake Passage indicating the presence of recently ventilated water, presumably Weddell Sea Bottom Water (WSBW) originating from the western Weddell Sea. This WSBW leaves the Weddell Basin through gaps in the South Scotia Ridge and spreads westward along the continental slope. It reaches the 2006 section and is probably stopped by Shackleton Fracture Zone. By applying an Optimum Multiparameter Analysis (OMP) using temperature, salinity, oxygen, silicate, nitrate and δHe^3 we determine the fractions of WSBW in the Drake Passage Section. The CFC age derived from the WSBW fractions indicates that there must be an additional CFC source, because the observed concentrations are higher than can be explained by the WSBW.