



Oxygen utilization rates and C:N molar ratios in the South Atlantic: a new methodology approach

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Physical and biogeochemical components of high quality oxygen and inorganic nutrient data from two WOCE lines in the South Atlantic east (1994-A14) and west (1995-A17) are objectively separated by means of a constrained least-squares Optimum MultiParameter analysis for the mixing of water masses. Combining the OMP results with the stoichiometric model by Fraga et al. (1998) and apparent ages from CFC-11, new estimates for oxygen utilization rates and the C:N molar ratios of the remineralized material are calculated for central and intermediate waters. A final expression relating the OURs with the nutritional quality of the remineralized material is obtained, which explains more than 93% of the total variability observed. This is the first time an expression relates the quantity and the quality of the remineralized material in the dark ocean.