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AN OMP-BASED APPROACH FOR DECONVOLVING SIMULTANEOUS TRENDS IN PROCESSES CONTROLLING SUBANTARCTIC MODE WATER PROPERTY DISTRIBUTIONS FROM HYDROGRAPHIC SECTIONS.

Inferring long term trends in the processes that control mode water properties from pairs of hydrographic sections is complicated by shorter term variability resulting from frontal movements and transient eddies. Additionally, examining changes in the relationships between physical and biogeochemical properties (e.g. eMLR) in Subantarctic Mode Water (SAMW) is complicated by the influence of long term warming and freshening trends upon the physical properties themselves. Here we present an OMP-based inverse model that estimates changes in the relative influence of processes from differences in measurements of physical properties, nutrient concentrations, and carbonate system parameters, and that allows for the influences of vertical displacements of water masses. Application of this model to SAMW suggests long term warming and freshening trends in the intermediate and mode water masses forming in the Southeastern Pacific that are consistent with other published estimates obtained using data with higher temporal coverage.

<http://www.sgmeet.com/osm2012/viewabstract2.asp?AbstractID=12297>

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