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Abstract View

Diffusion Coefficients Calculated from the Mediterranean Salinity Anomaly in the North Atlantic Ocean

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ABSTRACT

Vertical and horizontal austauch coefficients have been obtained from standard station data on the Mediterranean high-salinity tongue by use of a simple model including advection by a constant velocity and three-dimensional diffusion. It is shown that background effects can be reduced by applying the model to the salinity anomaly relative to a linear θ-*S* relationship. The analysis gives typical values for K_H of 1.5 to 3×10^7 cm^2 s^{-1} and for K_v of 0.3 to 0.7 cm^2 s^{-1}. It is argued that such values indicate the diffusion of potential density is not important in the main pycnocline of the North Atlantic anticyclonic gyre.

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