PRELIMINARY DETECTION OF MEDDIES BY TOPEX / POSEIDON SATELLITE ALTIMETRY

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Warm salty Mediterranean water tongue exiting through the Gibraltar Strait is known to form salt lenses at depths between approximately 700 and 2500m in the Northern Atlantic. These salt rotating lenses are known as Meddies and have been seen in GEOSAT sea level estimates. The Meddies play an important role in the transport of water properties from their source regions to ocean interiors. In the eastern Northern Atlantic preliminary results indicate an improvement with TOPEX/Poseidon data over GEOSAT in tracking the Meddies. Data from in-situ sea surface temperature are used to determine the location of the Meddies and then compared with TOPEX/Poseidon residual sea level estimates. As a first approach to the actual Meddy detection with altimetry, data from floats, along with simultaneous temperature transects, allow us to determine temporal and spatial coordenates of the Meddies. Preliminary results indicate good qualitative agreement between float location of the meddy and sea level residual signals from the TOPEX/Poseidon altimeter. Once located, we study the surface signal from altimetric data, also investigating its possible detection with AVHRR surface temperature. Although in this first step of our work direct oceanographic data give clues to detecting Meddies by satellite data, the objective is to describe the! surface expression of the'sc: Mediterranean lenses by high precision satellite data (as TOPEX/Poseidon), in order to remotely track its trajectory. This will allow a better understanding of the Mediterranean's impact on the Northern Atlantic Ocean.