

## **Mediterranean Water mass variability in $\Theta$ -S coordinates**

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The Mediterranean Sea is in many ways a miniature ocean, hosting an intense (relative to its spatial dimension) overturning circulation during which surface water entering the basin via the Gibraltar Strait is transformed in intermediate and deep waters. Over the last 50 years, long-term warming and salinification trends have been observed as well as transient events such as the Eastern Mediterranean Transient in the early 1990. Such events combined with the small dimension of the basin have led to drastic changes in the thermohaline structure of the basin in a decade providing a unique opportunity to investigate the impact of water mass anomalies on the basin-scale overturning circulation.

In this study, we use a high-resolution ( $1/12^{\text{th}}$ ) numerical simulation of the 1980-2012 period in order to investigate the impact of such transient events on the Mediterranean Overturning circulation. The model's output are mapped in  $\Theta$ -S coordinates in order to compute the mean thermohaline streamfunction for different time periods separated by major water mass modifications events. The main changes in the circulation will be presented.