



## **One decade of thermohaline variability in the deep western Mediterranean Sea (2004-2014)**

Katrin Schroeder (1), S.Ben Ismail (4), Harry Bryden (1,2), Mireno Borghini (1), Stefania Sparnocchia (1), Jacopo Chiggiato (1), and Alberto Ribotti (3)

(1) CNR-ISMAR (Italy), Venice, La Spezia, Trieste, Italy, (2) National Oceanography Centre, Southampton, UK, (3) CNR-IAMC, Oristano, Italy, (4) INSTM, Samabo, Tunisia

Recent intense deep water formation events in the western Mediterranean have produced a huge amount of a new deep water. Significantly warmer and saltier than previously, it substituted the resident deep water. The deep structure and properties began to change after winter 2004/2005 and the water rapidly spread towards the interior of the basin, in the direction of the Strait of Gibraltar and within the Tyrrhenian Sea. The changes observed over the past 10 years are substantial: since 2004 we witnessed increases in deep water temperature and salinity 3-4 times faster than during 1961-2004. The possible impacts these changes could have on a global scale are still an open issue.