The South Adriatic Sea as a deep water convection site in the Mediterranean Sea

Elena Mauri | Istituto Nazionale di Oceanografia e Geofisica Sperimentale (OGS)

Co-Authors

E. Mauri | Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS); Z. Kokkini | King Abdullah University of Science and Technology (KAUST); R. Gerin | Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS); G. Notarstefano | Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS); S. Simoncelli | Istituto Nazionale di Geofisica e Vulcanologia (INGV) and P.-M. Poulain | Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS) and NATO STO Centre for Maritime Research and Experimentation

Abstract (Poster)

The Adriatic Sea is the northernmost sub-basin of the Mediterranean Sea. The latitudinal elongated basin is connected to the Ionian Sea in the south through the Otranto Strait. The bathymetry is shallow in the north, while a deep pit characterizes the southern part. During winter, the basin undergoes a cooling due to strong easterly dry wind triggering coastal and open-sea deep-water formation, respectively in the northern and the southern areas. Since 2013, mainly during the pre-conditioning and convection phases, glider campaigns have been carried out along a transect crossing zonally the southern pit. Between 2013 and 2018 glider campaigns and floats provided evidence of occasional high salinity intrusion in the sub-surface layer exhibiting a double salinity maximum along the water column: one in the sub-surface layer and a second below 500 m. This specific vertical salinity distribution was present only in a few profiles in the previous decades, less than 1% on the 1445 inspected profiles. The glider data were analyzed along with observations of river discharges, heat flux products and salinity float data of the last 6 years to shed new lights on the dynamics of the area.