

EGU2020-9874

<https://doi.org/10.5194/egusphere-egu2020-9874>

EGU General Assembly 2020

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Recent changes of the salinity distribution in the South Adriatic

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The South Adriatic is one of the dense water formation site in the Mediterranean Sea. The variations of its thermohaline properties are relevant not only from an oceanographic and climatic point of view but also for the local impact on the vertical distribution of the biogeochemical parameters.

The South Adriatic Pit has been extensively sampled during the last forty years by traditional shipboard techniques. Float and glider measurements became part of the investigation only in the last ten years, providing a more detailed and more uniform spatio-temporal dataset. From the analysis, evidences of important changes of the South Adriatic Pit salinity vertical distribution emerge in the last 5 years. In the past, the Levantine Intermediate Water (LIW) entered the South Adriatic at a depth between 100 and 300 m, highlighted by a maximum in the salinity. The recent findings suggest that the LIW is no longer characterized by the highest salinity along the vertical profiles, which is present instead in shallower subsurface layers. In addition, in most of the seasons a thick low salinity layer is evident in the top 50-100 m. Among those changes, some peculiar haline characteristics occur in 2012 and 2017; they will be analyzed in concert with auxiliary data and model outputs.

How to cite: Mauri, E., Menna, M., Notarstefano, G., Gerin, R., Martellucci, R., and Poulain, P.-M.: Recent changes of the salinity distribution in the South Adriatic, EGU General Assembly 2020, Online, 4-8 May 2020, EGU2020-9874, <https://doi.org/10.5194/egusphere-egu2020-9874>, 2020