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Diagnosimg termohaline trends of the Atlantic Inflow by Argo data

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A total of 5136 ARGO profiles covering the North Atlantic area adjacent to the Strait of Gibraltar have been analyzed in order to estimate salinity and temperature trends and compare them with recent results of the Atlantic Inflow. Positive trends have been found in salinity for the surface and the Eastern North Atlantic Central Water (ENACW) layers with values of 0.038 ± 0.009 and 0.013 ± 0.003 respectively, which are in good agreement with recent observations in the Strait. To understand the possible mechanisms driving the changes, the time variability of salinity and temperature has been separated into two different contributions: one due to changes in neutral surfaces and the other related to vertical isopycnal displacements.