

AUTHOR'S RESPONSE

REVIEWER#1

We thank the reviewer for the comments and suggestions provided in the review process, which contributed to improve the quality of this paper.

REVIEWER#2

We thank the reviewer for the comments and suggestions. A detailed answer to the reviewer is provided below. In bold the reviewer's comments are shown. The updates in the manuscripts are in red font.

- **Lines 280-284. LIW bimodality in the depth domain is something also described and explained by Mihanović et al. (2021), it should be also commented here.**

Thanks for the comment, we have updated the manuscript at L.283-290.

- **Lines 359-360. The Adriatic salinity trends are about 5 times larger than the Adriatic salinity trends observed in the period 1952-2010 and quantified by Vilibić et al. (2013). This should be commented, also the possible source of such a large trends, which largely come by the biasing of the signal by the BIOS oscillations (see comment below).**

Thanks for the comment, we have updated the manuscript at L.367-373.

- **In all places where Kokkini et al. (2019) is used for commenting the Southern Adriatic thermohaline properties, please use also Mihanović et al. (2021), at it presents these properties in the quoted region but over a longer timescale.**

Thanks for the comment, we have updated the manuscript as suggested.

- **It would be appropriate in the bulleted conclusions part to added a bullet discussing in general the impact of time series length to the trend estimates. E.g. in the Adriatic, the salinity trends are clearly impacted by the BIOS, as the series starts in 2008, when the anticyclonic BIOS was present, so that the salinity trends are so large. Here, the periodicity of the BIOS is of the same order of magnitude than the length of the time series in the Adriatic. That might be also relevant for other sub-regions.**

Thanks for the comment. A new bulleted conclusion, which emphasizes **"the impact of time series length to the trend estimates"**, has been included at L.466-470.

- **Please add Vilibić et al. (2012 and 2020) to the reference list.**

Thanks for the comment, Vilibić et al. (2012 and 2020) have been added to the reference list.