This is an additional response to a reviewer's comment that was not addressed in the first response and concerns the quantitative change of the results when 35 years averaging (instead of 30 years) are takeb into account.
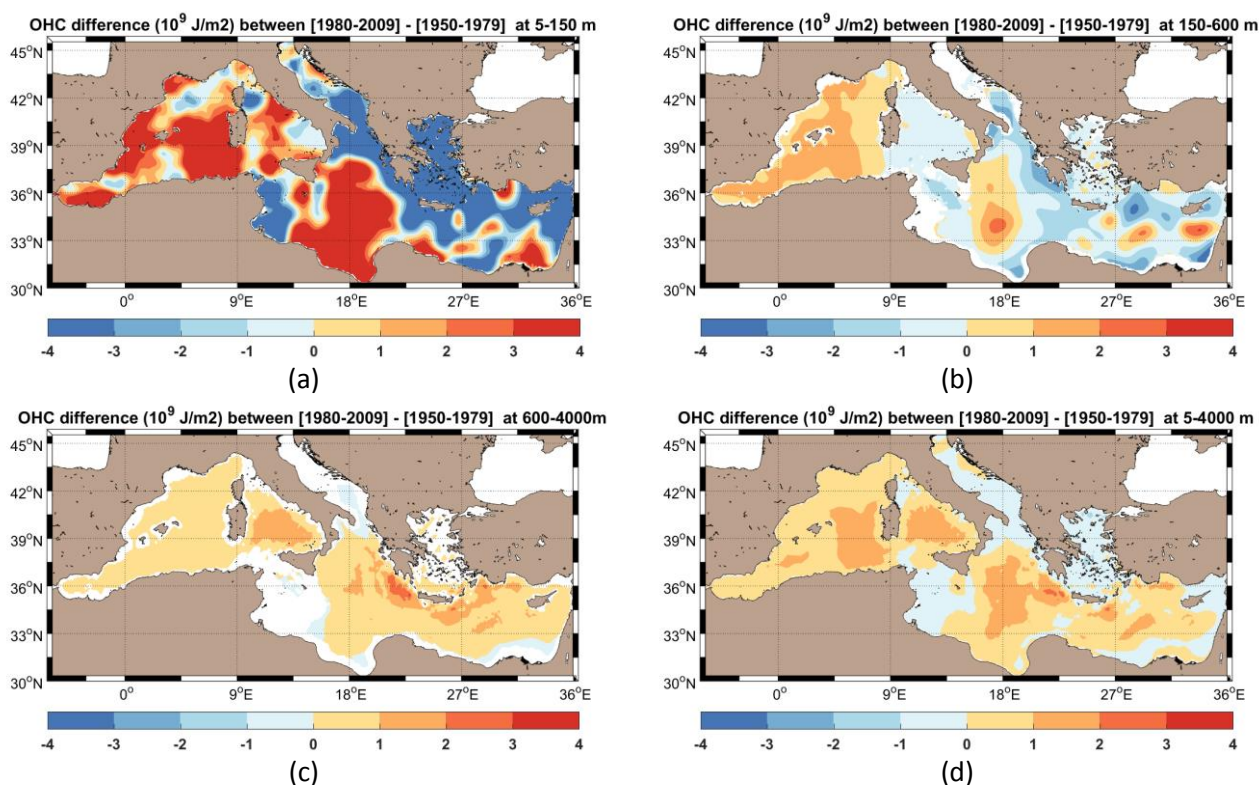
Please see below *the response (in italics)* following the **reviewer's comments (in bold).**
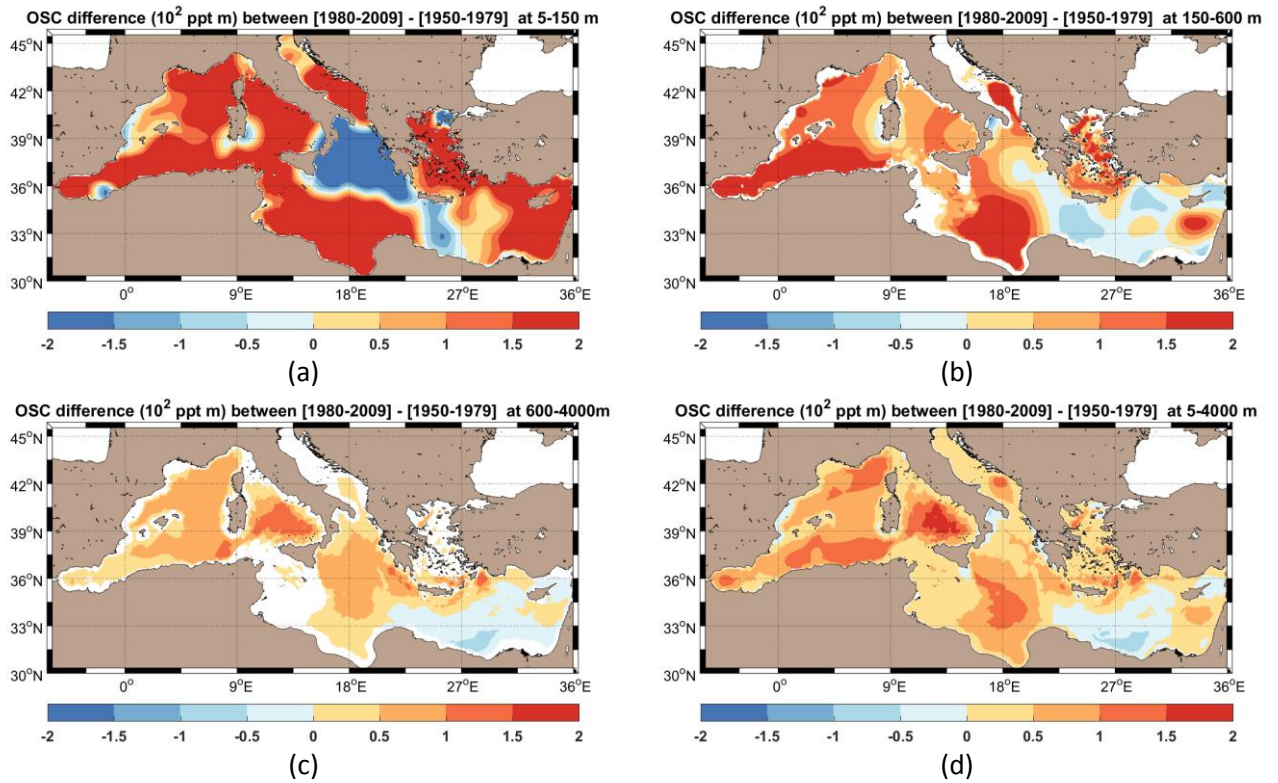
Athanasia Iona.

Comment by R. Proctor (Referee #2), page 6, line 11: But does it change the quantitative results, and if so, by how much?

Reply to the reviewer:

In the manuscript it is said the period from 2000 to 2015 is treated as a decade and the averaging of the additional recent years actually does not change the qualitative results of the comparison of the two successive periods. The figures below show the climate shifts of the areal OHC and OSC density for a 30-years averaging period for a qualitative comparison with the figures 1, 2 of the manuscript.

For comparison with Figure 1 of the manuscript: Climate shift of areal density of Ocean Heat Content in 109 J/m2 between two 30–year periods 1980–2009 and 1950–1979 for: (a) 5–150 m, (b) 150–600 m, (c) 600–4000 m, (d) 5–4000 m.

OSC difference (10² ppt m) between [1980-2009] - [1950-1979] at 5-150 m (a)

OSC difference (10² ppt m) between [1980-2009] - [1950-1979] at 150-600 m (b)

OSC difference (10² ppt m) between [1980-2009] - [1950-1979] at 600-4000m (c)

OSC difference (10² ppt m) between [1980-2009] - [1950-1979] at 5-4000 m (d)

For comparison with Figure 2 of the manuscript: Climate shift of areal density of Ocean Salt Content in 102 ppt m between two 30–year periods 1980–2009 and 1950–1979 for: (a) 5–150 m, (b) 150–600 m, (c) 600–4000 m, (d) 5–4000 m.

Table below shows for the two different averaging periods, the mean values of the climate shifts for OHC, OSC areal density over the whole Mediterranean for a quantitative comparison.

Areal density of Ocean Heat Content in 10^9 J/m2, mean Mediterranean value:

Layer (m)	[1980-2015] - [1950-1979]	[1980-2009] - [1950-1979]
5-150	-0.0639331	-0.191992
150-600	-0.0876253	-0.168138
600-4000	0.575278	0.567194
5-4000	0.371213	0.349208

Areal density of Ocean Salt Content in 10^2 ppt m, mean Mediterranean value:

Layer (m)	[1980-2015] - [1950-1979]	[1980-2009] - [1950-1979]
5-150	1.80316	1.72727
150-600	0.871111	0.81489
600-4000	0.353313	0.342651
5-4000	0.437761	0.420287