Annex of new figures and tables proposed to correct the manuscript.
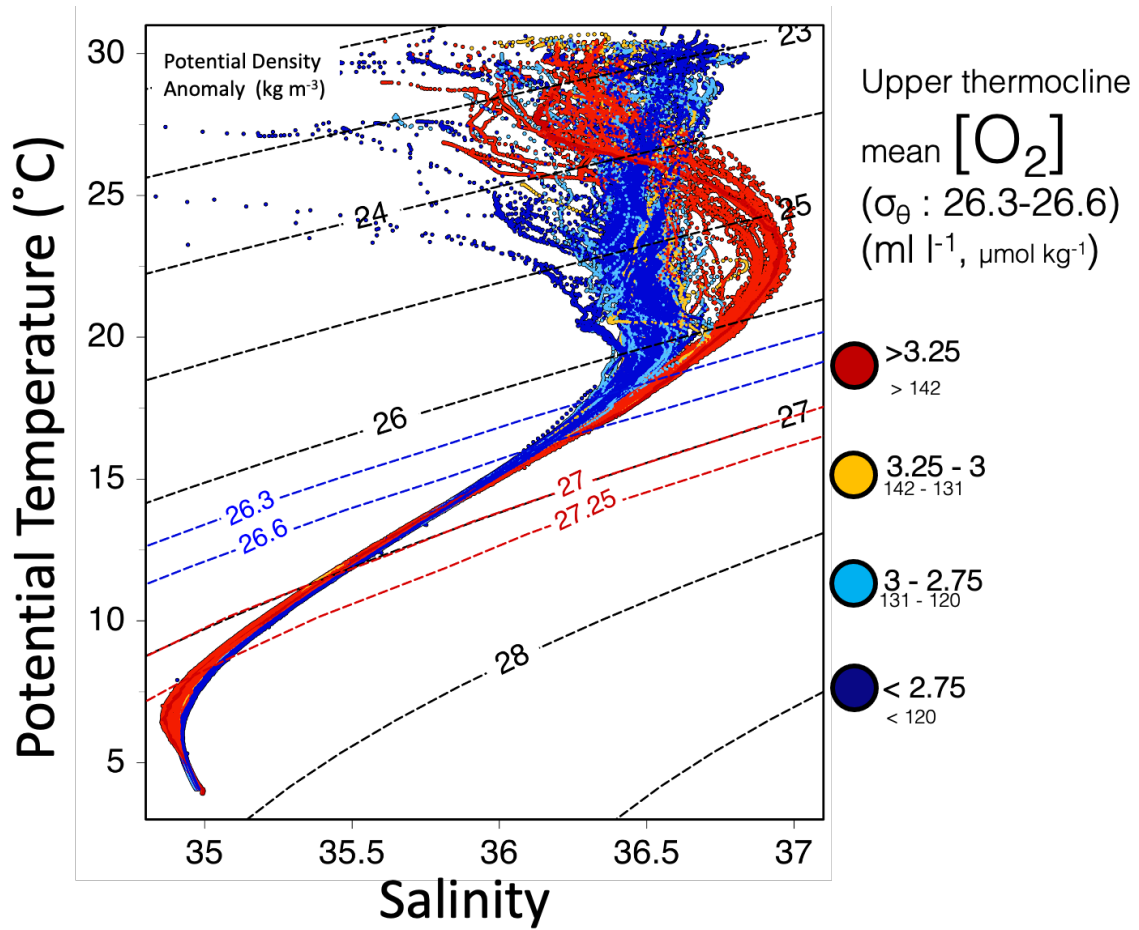
Figure 7. T-S diagram of all XIXIMI stations, color coded according to the upper thermocline oxygen range.
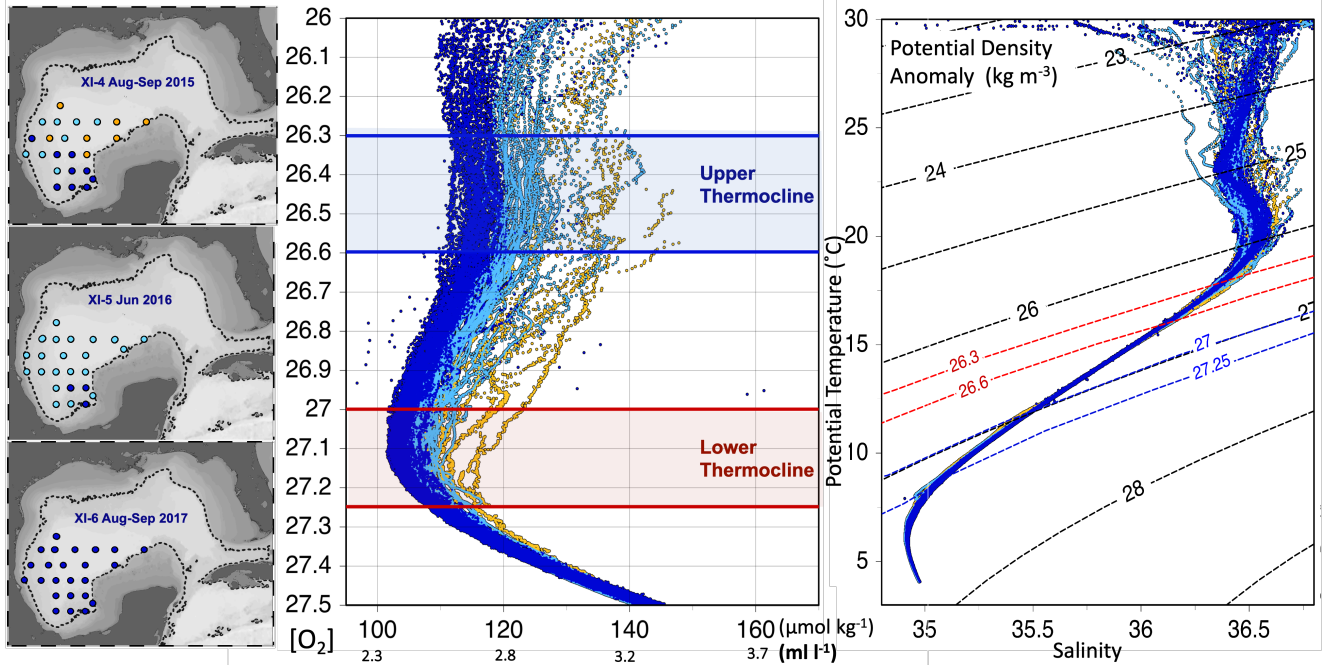
Figure 8. Maps of 24 stations from cruises XIXMI 4, 5 and 6 in the same coordinates. Density profile of oxygen from 24 stations from cruises XIXMI 4, 5 and 6. T-S diagram of 24 stations from cruises XIXMI 4, 5 and 6 in the same coordinates.

Table
Mean oxygen, salinity and temperature in the upper and lower main thermocline of the Gulf of Mexico (data from 24 stations located in the same coordinates for each cruise)

Cruise	Mean [O$_2$] (ml l^{-1}, µmol kg^{-1})		Mean Salinity		Mean Temperature (˚C)	
	σ_θ (kg m^{-3}) 26.3-26.6	σ_θ 27-27.25	σ_θ 26.3-26.6	σ_θ 27-27.25	σ_θ 26.3-26.6	σ_θ 27-27.25
XIXIMI-4 Aug-Sep 2015	2.87 ± 0.19 125 ± 8.6	2.8 ± 0.08 107.8 ± 3.4	36.29 ± 0.88	35.26 ± 0.14	17.18 ± 0.62	9.9 ± 0.9
XIXIMI-5 Jun 2016	2.84 ± 0.06 123.5 ± 2.7	2.8 ± 0.05 107.9 ± 2.3	36.29 ± 0.82	35.24 ± 0.13	17.18 ± 0.61	9.84 ± 0.99
XIXIMI-6 Aug-Sep 2017	2.67 ± 0.05 115.6 ± 2.2	2.8 ± 0.05 105.1 ± 2.1	36.27 ± 0.85	35.16 ± 0.13	17.04 ± 0.63	9.76 ± 0.98

A constant oxygen change rate without LCE detachment was assumed as the oxygen difference measured between cruises XIXIMI-5 to 6.
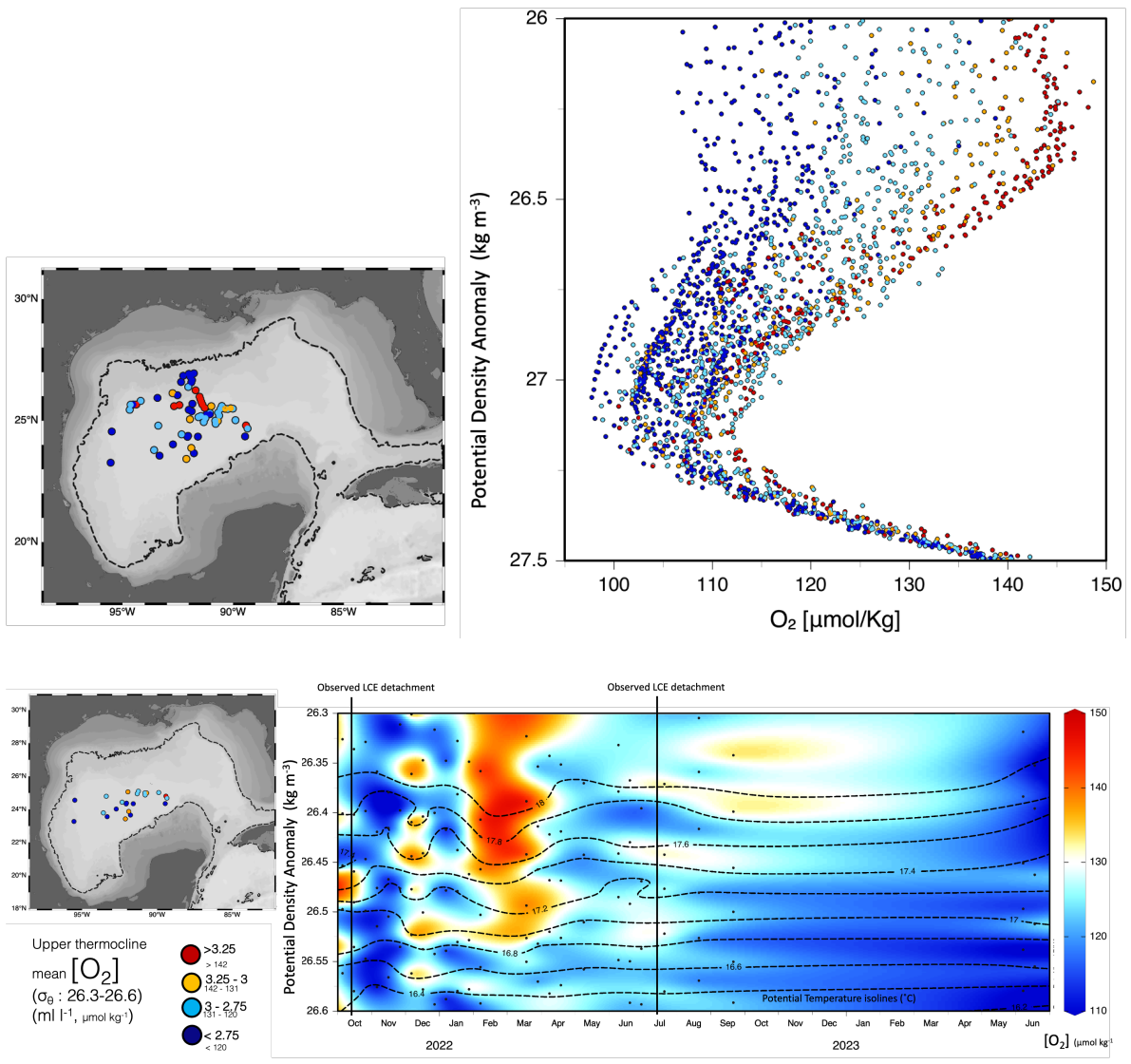
Figure 9 . Data from BioARGO Buoy 4903622 from October 2021 to june 2023.
 Temporal variability of BioARGO buoy 4903622 for stations at and south of 25˚N, map of stations color coded according to the upper thermocline oxygen range
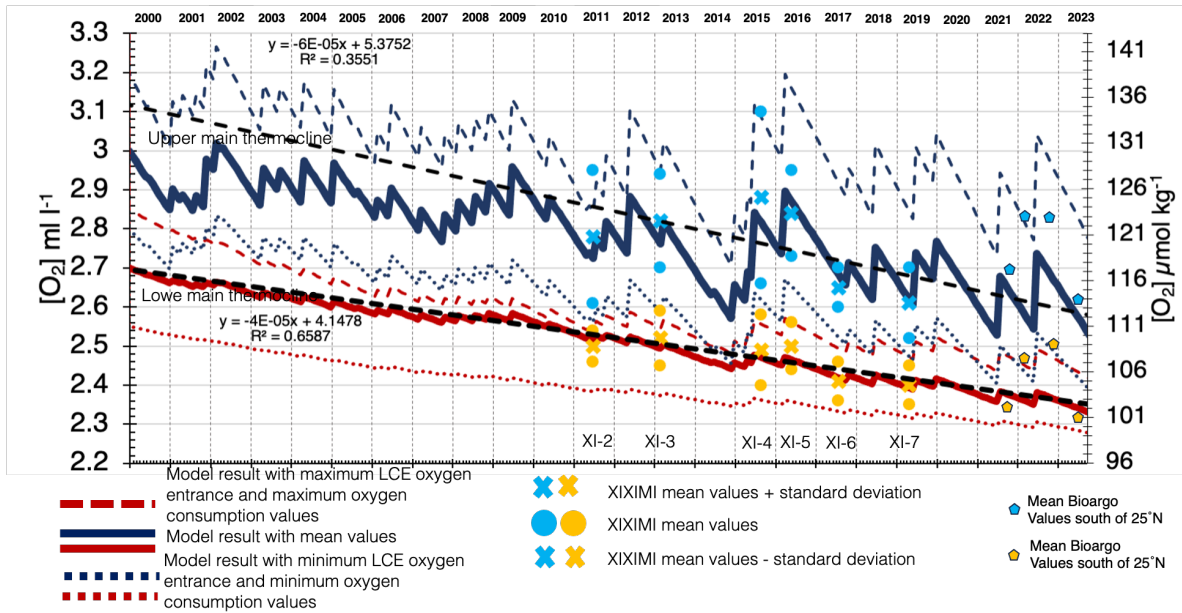
Figure 6 remade. Oxygen variability estimated from box model for the upper (blue) and lower (red) thermocline from 2000 to 2023, with data from XIXIMI cruises and BioARGO buoy 4903622.