Trends and interconnections of physical parameters in the Mediterranean Sea

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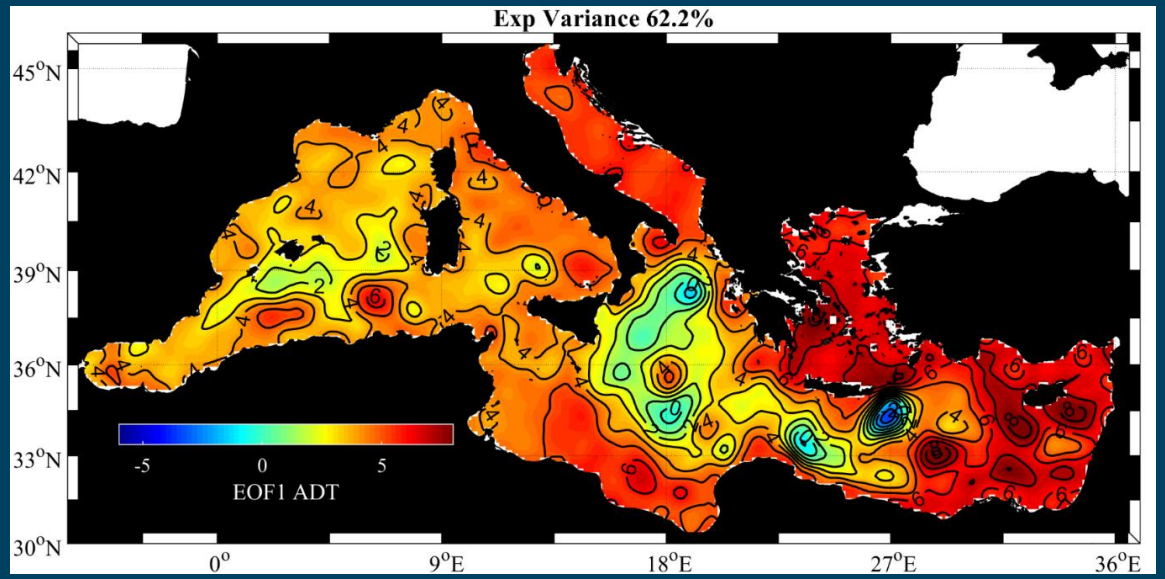
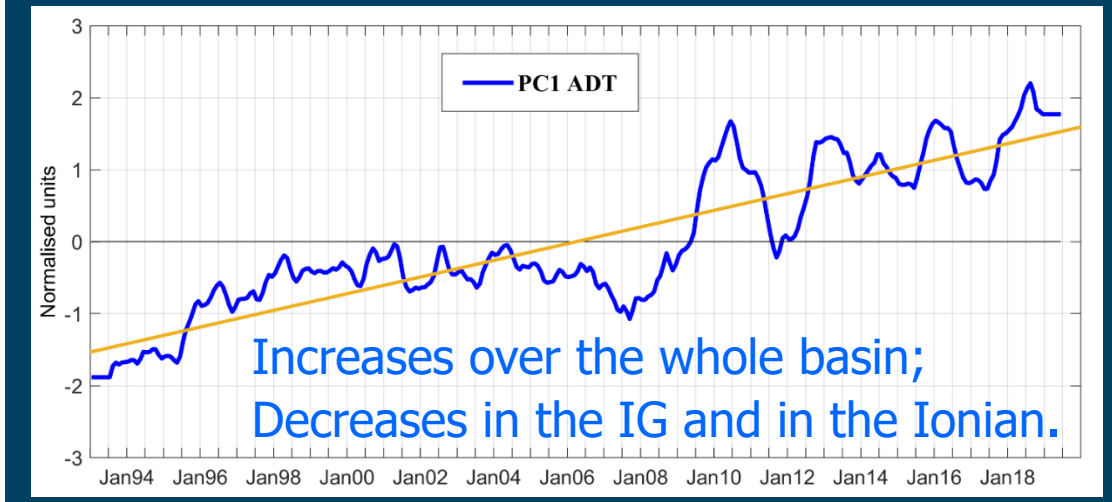
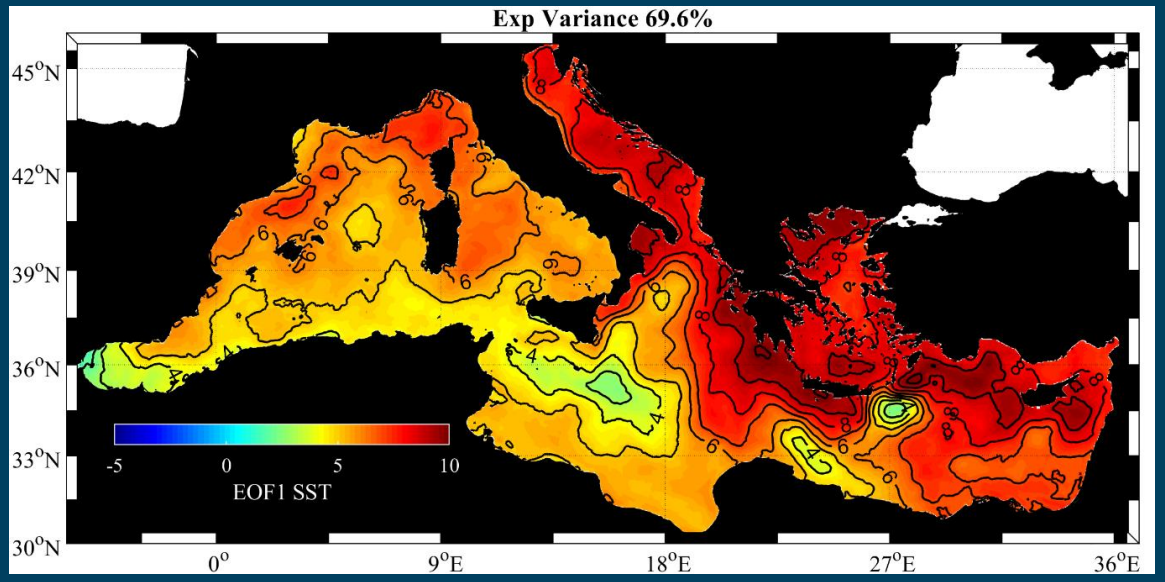
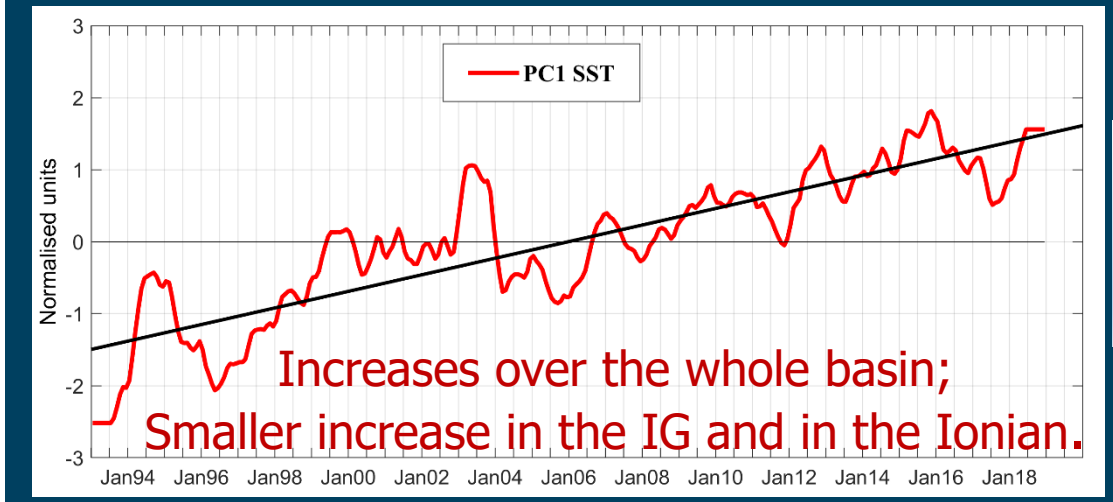


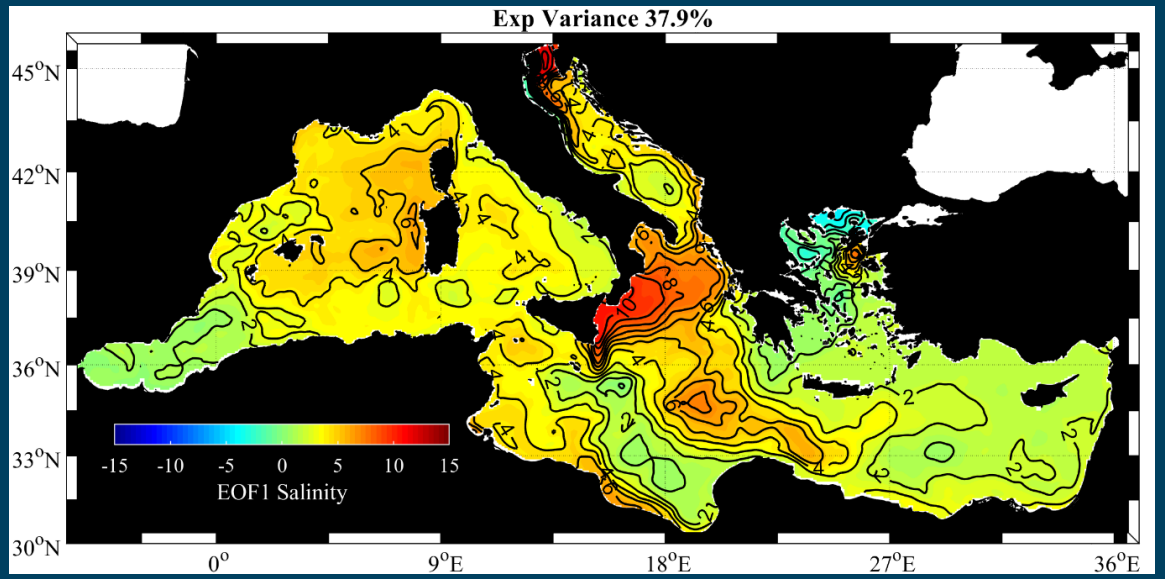


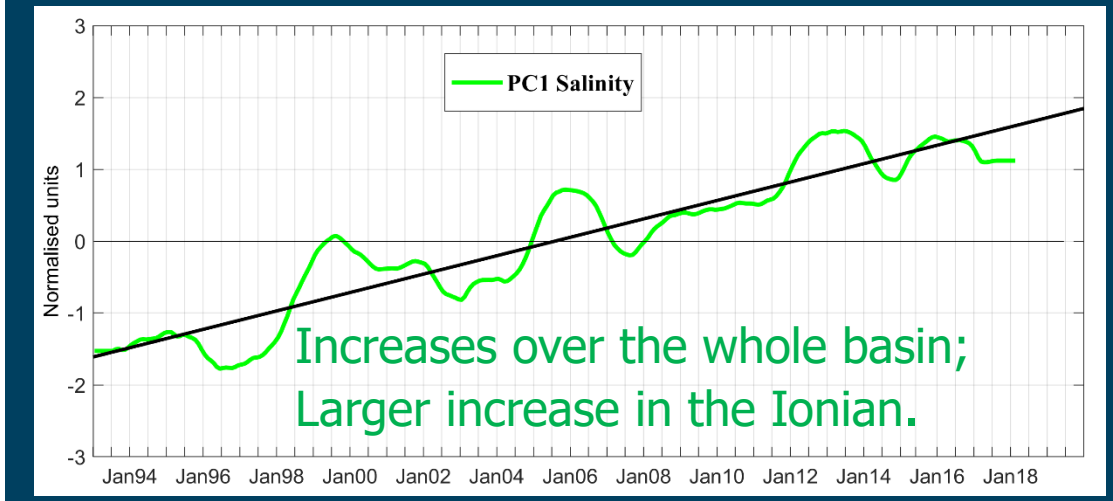
Absolute Dynamic Topography (ADT)





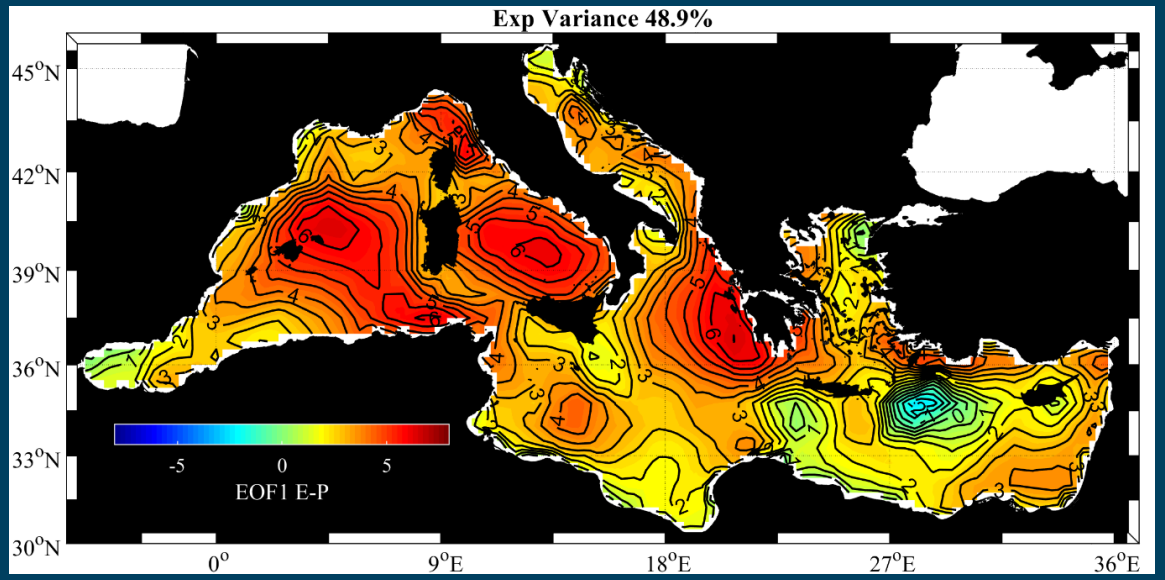
Satellite Sea Surface Temperature (SST)

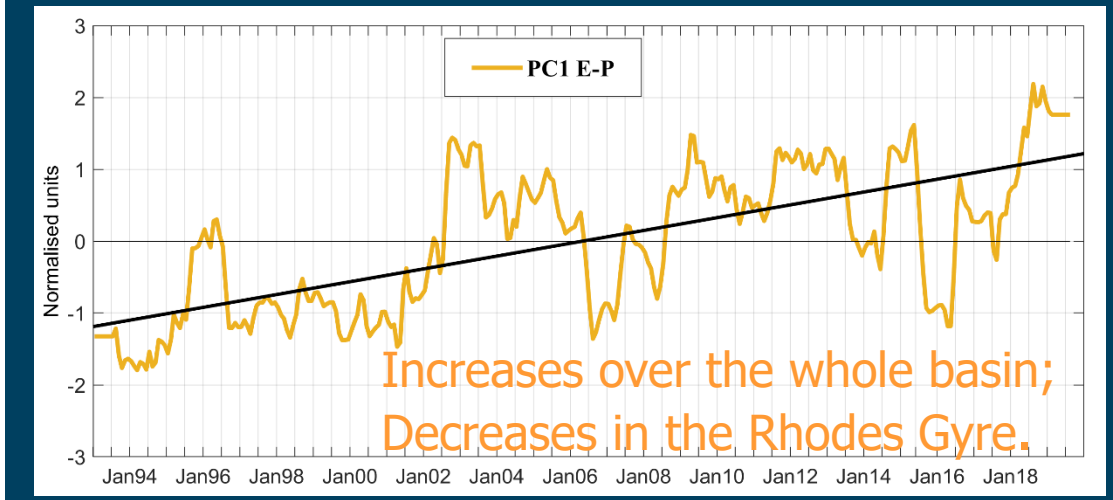




CMEMS Reanalysis of Sea Surface Salinity (SSS)

The SSS trends described from the reanalysis is confirmed by the Argo float data (2005-2019)





ECMWF freshwater flux (E-P)

Are all these parameters correlated to each other?

A good beginning…

Correlation coefficients (95% confidence level)	
PC1 ADT/SST	0.82
PC1 ADT/E-P	0.61
PC1 SST/E-P	0.56
PC1 SSS/E-P	0.54

This table shows the correlations between the amplitude of the EOF1s in function of time (PC1s), performed on the couples of the independent variables;

All the correlations are statistically significant.

Open questions…Ongoing work

- At the global scale, annual mean SSS and freshwater flux have good spatial consistency (Du et al., 2019). Is it the same for the Med Sea?
- At the global scale, E-P and ocean dynamic processes interact to determine the mean distribution of SSS. Does this also happen in the Med Sea?
- Which is the role of freshwater flux changes in regulating the SST and ADT distribution?