



## **Long-term trends in the Black Sea biogeochemistry: internal processes and external influences.**

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The Black Sea, as the major oxic/anoxic marine system, has been a laboratory basin for several decades. It reveals both natural and anthropogenic changes in its structure. Observational time-series exceed a century period starting in 1890 and making possible to trace and analyze oscillations, trends and catastrophic changes in physical and biogeochemical properties of the Black Sea.

Starting with an analysis of dramatic changes in the biogeochemical structure of the Black Sea in the 1980's and splitting the effects of climate changes and anthropogenic pressures, we have gradually extended the period of analyzed variations to a century. This has made possible to trace truly long-term variations in thermohaline and biogeochemical structure of the sea and their features, the influence of changes in the thermohaline structure on biogeochemical properties, the effects of climate changes and trends in anthropogenic pressures, revealing both linear and non-linear effects in the evolution and regime shifts in the Black Sea system.