P70. ON THE RESPONSE OF COASTAL PHYTOPLANKTON COMMUNITIES TO ANTHROPOGENIC AND CLIMATIC CHANGES

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The study is focused on assessment of phytoplankton community alterations associated to variation of nutrients loads in the Bulgarian Black Sea coastal area due to interaction of human activities and meteorological conditions and the sensitivity of selected phytoplankton traits to respond to environmental pressure. The analysis was based on array of environmental (nutrients, Secchi depth) and meteorological data and a suit of phytoplankton community features (phytoplankton numerical variables, taxonomic based metrics and biodiversity indices and an integrated phytoplankton index-IBI) over the period 2000-2014. Eutrophication index TRIX was used as an integrated measure of eutrophication level. The sensitivity of phytoplankton traits were analyzed employing RDA to disclose seasonal patterns of response to nutrients and the source of pressure, while the environmental variables were verified by PCA. Statistically significant correlations (RDA) were found between phytoplankton metrics and nutrient loads of different seasonal pattern associated to eutrophication origin. In summer most of the phytoplankton metrics were highly correlated to increased nutrient fluxes originated from the watershed, associated to episodic rain-storms events. The results show that climatic variables act as factors that modulate the anthropogenic nutrient enrichment patterns controlling phytoplankton growth.