P63. LONG-TERM MONITORING OF SEASONAL AND INTERANNUAL VARIABILITY OF HYDROLOGICAL STRUCTURE IN COASTAL ZONE OF THE NORTH-EASTERN BLACK SEA

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The work demonstrates the results of the 6-years complex ship-borne monitoring of coastal zone in the north-eastern part of the Black Sea, carried out by the Southern Branch of P.P.Shirshov Institute of Oceanology, RAS, on a marine cross-section at the Blue Bay (Gelendzhik) beam 1-2 times per month. Climatic changes and eutrophication exert a significant impact on the sea water at the coastal area. In case of the Black Sea these factors pile up with a permanent hydrogen sulphide contamination of the sea water below 80-200 meters depth (depending on the season and distance from the shore). Strong pycno-halocline at the depths from 70 to 160 meters, formed due to the inflow of high salinity water from the Marmara Sea, inhibits the mixing between the water layers and, as a result, also limits the oxygen transport into the deeper layers. The winter cooling reduces the pycno-halocline and enriches the top active layer, down to the cold intermediate layer (CIL), with oxygen and nutrients, which subsequently lead to a vernal phytoplankton bloom. Formation of the thermocline and upper quasi-homogeneous layer (UQL), caused by the water warming in spring, at large extent determines a thickness of phytoplankton-rich layer during the spring and summer seasons. The work demonstrates seasonal and interannual dynamics of the UQL, thermocline, CIL and hydrogen sulphide boundary position in the coastal zone of the north-eastern part of the Black Sea.