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Characteristic Features of Sea Level Series Analysis in the World Ocean Current Climatic Eustasy Research

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Climatic eustasy - sea level long-term rise or decrease, is the result of ocean waters thermal expansion and the freshwater balance between land and ocean. This phenomenon accompanies climate change with some delay and like air temperature changes is an ongoing process. It is positive in warm climatic cycles and vice versa.
The global climate warming, has provoked current climatic eustasy, which is started in high Northern latitudes in second part of 1890 's, and in secondary ones (basins of the Mediterranean and Black Seas)- in 1915-1923. In 2010 it caused the sea level raise at these latitudes at 0.3-0.4 m, but in the basins of these seas at 0.15 -0.20 m respectively.
Climatic eustasy cycles and their continuity significantly influence on the comfortable environment forming process for living organisms in the sea and the coast. Therefore, the study of fundamental characteristics of this phenomena and its forecast in the near future (2025-2030) is highly topical issues.
The solution of mentioned problems, with high precision and accuracy, is possible using "sea levels' long statistic series", combined with similar series of air and sea temperatures. The "long" is referred to as levels series if they are composed by two fragments of statistically sufficient length. First one contains information covering the period of negative eustasy, but the second- positive one. Before the using, from the fragments, the "noises", accompanying climatic fluctuations, various short-term trials and errors associated with data collection and processing have to be excluded. With special care the geological trend, caused by the altitude displacement of the coast, carried a data collection system, also should be excluded from them.
Out of processed fragments, by the relevant methods, the amount of negative (Hn) and positive (Hp) eustasies, with precision of mm/year is determined. The sum of the absolute value of latter ones is the absolute eustasy (Ha), representing the local rate of World Ocean level rise in the monitoring area. On the basis of mentioned calculated values it is possible to determine regional and global values of modern eustasy.
Integrated studies of sea levels such statistical series during the 1873-2010, paired with air (1881-2010) and coastal waters (1924-2010) temperatures series of the Black Sea Eastern shores, revealed a high correlation ([U+F0B3]0.7 -0.8) between these elements. Clearly is outlined 90 year-term summer air temperature cycle, from the beginning of the 1900's, with the peaks in 1940 and late 1986-1990's.
Modern temperature cycle, starting in 1990-s, as well as the accompanying climate eustasy and coastal waters warming, is characterized by the large acceleration in comparison with the first half of the last cycle. It should be mentioned that after 1990's the Black sea level rate was accelerated to 3,0-3,2 mm/year. The Georgian Black Sea coast air, sea temperatures and sea levels were increased substantially, and in the most tranquil 2010 year surpassed the corresponding absolute highs.