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Coastal to shelf environments across time and space – Quaternary time, NW Black Sea

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Abstract

Quaternary time has as major characteristics the development of successive cycles of glacial and interglacial periods, with corresponding sea level variations. For the Black Sea basin, data from many authors allowed the compilation of 19 graphs regarding the sea level changes for the last 20000 years. These 19 graphs are quite controversial, but in general is agreed that an important low level (between 100 and 150m lower than today) of the sea was recorded about 9.5-8.5 ky BP; many other smaller (with amplitudes between 10-40m) sea level variations have been traced in different parts of the Black Sea Basin. The largest regression/transgression variation was between 14 ky BP to 7.5 ky BP, with the starting regressive point at about -40m present sea level (psl), maximum regression at -150m psl and about -8m psl at the end of the transgressive period. Going more in the past and taking into account during the Eemian time (MIS 5e) the Black Sea was about 10m higher than psl we can conclude that up to and after Neoeuxinian the entire present NW shelf of the basin was swept by waters. The sea level variation graphs suggest the NW shelf area was the subject of the development of different environmental settings as: lakes, marshes, coastal areas, fluvio-deltaic sedimentary bodies, variable network of rivers. The NW shelf of the Black Sea is the widest and thus is the perfect place to study the palimpsestic character of sedimentary records, corresponding to successive sea level variations. Our very high resolution seismo-acoustic data, together with coring information, bring new insights regarding the evolution during Quaternary of the NW Black Sea, from coast to shelf.

Biography

Since more than 35 years dealing with seismo-acoustic methods and GIS for deciphering the evolution of marine environments

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