Cretaceous avalanche carbonate sedimentation (Black Sea segment of Tethys)

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From the point of view of assessment of oil and gas bearing prospects of carbonate sections the first priority has the revealing of the biogenic constructions (reefs, bioherms, biostromes), reservoirs at different stages of lithogenesis. In this context the geological-paleooceanographic pre-conditions of formation of the carbonate accumulation bodies in post-Cretaceous time within the Black Sea segment of Tethys are considered.

Marine basins of the Black Sea continental margin in Late Cretaceous were located within the East-Mediterranean province of the Tethyan realm (30-35° NL). For this paleobiogeographic zone a significant development of reefogenic constructions was characteristic, with which, in particular, the extraordinary oil and gas bearing of the provinces of Gulf of Mexico and Near East is related.

In the whole section of Upper Cretaceous of the Black Sea-Crimean region the lithological and geophysical features of presence of the accumulation bodies, related to the avalanche carbonate sedimentation, are fixed. Characteristic is their discrete development, which, in our opinion, was caused by the fluctuations of the World ocean level, which during the Late Cretaceous are calculated 6 to 9. Taking into account the available geological data and these transgressive-regressive impulses the model of the spatial-temporal occurrence of organogenic accumulation bodies of different genetic types has been elaborated. Three types of such deposits have been distinguished. The first – the reef-bank constructions, made up of remnants of algae, briozoa, crinoids, rudists and corals. The second – the bodies, represented by the products of damage of the reef-bank constructions, as well as pithonella accumulations. The third – lithoherms, which were formed in relatively deep-water areas of the basin. Sea-level fall episodes (Middle Cenomanian, Turonian-Coniacian, Maastrichtian) are considered as the moments favourable for the formation of bank-reef bodies in the top parts of elevations, on the slopes of which the …….. deposits of the products of damage of the organogenic constructions have deposited. The development of lithoherms is forecasted in the depression areas of the sedimentary basin at conditions of the high sea-level (Santonian-Campanian).