SEDIMENTATION SETTING OF THE BLACK SEA

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The Black sea basin is filled by Cenozoic sediments arranged in cycles of onlapping strata. The thickness of these sediments is 14 km.

On the data available in NIPlokeangeofizika, the Cenozoic sediments are represented by clays with bands of carbonates and sandstones (INITIAL. 1978). Among them the Maikopian sediments are represented mainly by clays, sandstones taking a small part of the total amount of rocks.

Deep or shelf nature of sedimentation setting is proved by some features, the most important of them is an old continental slope. We have designed for the Black sea a special technique of determination this old continental slope in the CDP seismic section (TUGOLESOV *et al.*, 1990). If we bear in mind this feature, the Black sea basins were deeep in the Eocene time already. Another good indicator of the good setting is presence of thick oblique bedding sediments, connnected with foredeltas. The same deltas occur in the Maikopian sediments. A complex dynamic picture of the sedimentation settings is typical of the Miocene time. From one hand, it was a depression of the Black sea basins, their extension, joining and formation of the entire basin. Thick submarine fans were discovered in the Miocene sediments in the periphery of the basin, which is an indirect index of deep sea. From another hand, the mountain structures rimming the Black sea were intensively growing at that time. Together with tectonic movements there were short-time and frequent eustatic sea level changes, which were recorded in the geologic section. In the Sarmatian section, along the northern flange of the Shatskiy ridge it was identified a cutting of the river bed, which testifies a sea level fall at this time. As for the Messinian time when a sharp fall of the sea level in the Mediterranean took place, there are no direct features which can prove the same fall in the Black sea. In the quaterny time, the formation of the deep basin of the Black sea was going on. All sediments were accumulated as a result of run-off of the rivers. The Danube was the main supplier of sediments, whose fans occupy a considerable part of the western half of the Black sea.

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CLAYS DIAPIRS IN NEOGENE-QUATERNY SEDIMENTS OF CENTRAL SICILY : EVIDENCE FOR ACCRETIONARY PROCESSES

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Neogene-Quaternary sedimentary sequences of the central Sicily exhibit characteristic horizons of chaotic clay, known as Argille brecciate, occurring at different stratigraphic levels. Five main horizons of Argille brecciate have been distinguished in the Tortonian-Lower Pleistocene sequences. These horizons have a thickness ranging between a few meters to a hundreds meters and are mainly made up of darkly brecciated clays containing exotic blocks. These horizons have been interpreted as large olistostromes linked to gravitational processes occurring on the slopes of the basin.

To better define the significance of these levels sedimentological and structural observations have been carried out on the horizons which occur within the Plio-Pleistocene sequences cropping out at the frontal part of the thrust belt. These levels are made up of dark-grey to brown clays showing a distinctive brecciated to cataclastic texture. These sediments, that usually contain re-worked Miocene microfaunas, include several blocks represented by volcanics and sediments belonging to the meso-cenozoic sequences involved in the Sicilian thrust belt. Volcanics are represented by alkaline basalts similar to those that characterize the mesozoic sequences of the Sicani domain, and by transitional basalts. Sedimentary blocks are made up of quartzarenites of the Numidian Flysch, glauconitic sandstones, varicoloured clays of the Sicilide units, reef limestones of the Panormide domain, Cretaceous marly-limestones and Miocene calcarenites belonging to the frontal units of the chain. Blocks of the Messinian sequence (Tripoli, evaporitic limestone and gypsum) and of the Lower Pliocene marly-limestones (Trubi) are also to be found.

These chaotic horizons occur as kilometric-long lens at the base of the major thrust sheets or as large intrusions showing typical flow-structures. These observations suggest that brecciated clays within the Plio-Pleistocene sequences may represent the results of mud diapirism occurring at the frontal part of an accretionary wedge. Their geometry, as well documented in several seismic profiles carried out along active accretionary complexes, reflects mud diapirs and mud ridges related to the frontal thrusts that during their emplacement have sampled different terranes of the accretionary complex and of the overlying slope sediments.