

Tectonic evolution of the Crimean Mountains during the Meso-Cenozoic in the context of the Black Sea-Greater Caucasus domain

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The tectonic evolution of the Crimean Mountains (CM) as an uplifted fragment of the northern shelf of the Black Sea is a part of the geological history of the Greater Caucasus (GC) and the Black Sea (BS) domain. The Crimea owes its origin to the subduction of the Neotethys beneath the Eurasian margin which is the main geodynamical process that had a significant influence on the development of the CM, changing the tectonic conditions during its geological history.

The main tectonic stages recorded in BS-GC region are related to the subduction of the Neotethys and its closure: 1) the opening of the BS and GC basins in back-arc position, starting from the Early-Middle Jurassic and then after during the Early to mid - Cretaceous and in the Paleocene-Eocene ; 2) the continental collision between the Eurasian margin with Tauride-Anatolide and South Armenian microplate and then with Arabian plate. These collisions triggered the shortening of the BS Basins, thus, the inversion structures have been described all around the Black Sea (Pontides-Balkanides orogens, Romanian shelf and the area of Odessa Shelf – Crimea – Greater Caucasus). However, the adaptation of the assembled geological material about the CM into the tectonic evolution of the Alpine belt's remains difficulties and stays contradictory.

Focusing on that we 1) present new geological structural data from the CM (geological cross-sections and the new map of the structural patterns of the CM), demonstrating the correctness of the division of the CM on Western and Eastern part; 2) precised the trends and the timing of the tectonic stages during the Mesozoic-Cenozoic and defined their corresponding structures using the integral study of new micro tectonic data (paleostress analysis) from the Eastern CM and published data from the Western CM; 3) analyzed the low rate seismic records along the geological cross sections via the CM.

Finally, reconsidering both: the main scientific achievements of recent decades about the geology of the CM and the results of this study we propose the tectonic evolution of the CM since the Late Triassic that allows defining the place of the Crimea in the geological history of the GC-BS domain.