HPQ-02 Black Sea?Mediterranean Corridor during last 30 ky: Sea level change and human adaptation

Climatically forced Caspian Sea level changes as it recorded in Pleistocene succession

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Intensive orogenic movements adjacent to South Caspian basin folded areas and submersion of its central parts at the end of Pontian-beginning of Early Pliocene led to dramatic PaleoCaspian Sea level fall (from 600 to 1500 m (Reynolds, 1998)). Since that time sedimentation there took place under conditions of isolated basin temporarily connected with Black Sea in Upper Pliocene (Akchagyl). Being the largest isolated basin in the world with hyper unstable sea level regime the Caspian Sea represents the beautiful model area for studying of dynamics of sedimentary basins' development in short -term intervals.

The Lower Pleistocene (Absheron stage) and Middle Pleistocene (Khazar stage) exposures (Shikhovo outcrop) located in Absheron peninsula in the western flank of the South Caspian depression have been studied with application of multiple geology and analytical tools - sedimentology, paleontology, sequence-, bio-, chemostratigraphy, isotope and trace elements geochemistry. Lithologically these sediments are represented by shelly sandstones, coarse-medium grained sandstones, silts and silty shales.

The Caspian Sea level fluctuations were recorded in Pleistocene succession as depositional environment changes within shoreface -offshore facial zones. The full depositional cycles of a high order with low and high stands are clearly identified within Lower and Middle Pleistocene successions. This study aims to define a relationship between climatic variations, high - frequency Caspian Sea level changes and facies variability in Pleistocene.

Data on O, C isotope composition of ostracods shell carbonate as well as Ca/Mg, Sr/Ba ratios therein testify to significant climate and basin salinity changes through out the Pleistocene and provided us by unique opportunity for characterizations of short-term climatic cyclicity in Lower-Middle Pleistocene, which was the major lake-level control.

The applied multi-component approach to study of sedimentary response to climate changes in the Caspian Sea demonstrated the strong influence of climatically driven rapid fluctuations of this closed basin level on stratigraphic architecture and faunal assemblages in the Pleistocene succession.