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Tectonic stratification and seismicity of the accretionary prism of the Azerbaijani part of Greater Caucasus

Akif Alizade, Talat Kangarli, and Fuad Aliyev
Institute of Geology ANAS, Baku, Azerbaijan (fuad_al@yahoo.com)

The Greater Caucasus has formed during last stage of the tectogenesis in a geodynamic condition of the lateral compression, peculiar to the zone pseudo-subduction interaction zone between Northern and Southern Caucasian continental microplates. Its present day structure formed as a result of horizontal movements of the different phases and sub-phases of Alpine tectogenesis (from late Cimmerian to Valakhian), and is generally regarded as zone where, along Zangi deformation, the insular arc formations of the Northern edge of South Caucasian microplate thrust under the Meso-Cenozoic substantial complex contained in the facials of marginal sea of Greater Caucasus. The last, in its turn, has been pushed beneath the North-Caucasus continental margin of the Scythian plate along Main Caucasus Thrust fault. Data collected from the territory of Azerbaijan and its' sector of the Caspian area stands for pseudo-subduction interaction of microplates which resulted in the tectonic stratification of the continental slope of Alpine formations, marginal sea and insular arc into different scale plates of south vergent combined into napping complexes.
In the orogeny's present structure, tectonically stratified Alpine substantial complex of the marginal sea of Greater Caucasus bordered by Main Caucasus and Zangi thrusts, is represented by allochthonous south vergent accretionary prism in the front of first deformation with its' root buried under the southern border of Scythian plate. Allocated beneath mentioned prism, the autochthonous bedding is presented by Meso-Cenosoic complex of the Northern flank of the South-Caucasian miroplate, which is in its' turn crushed and lensed into southward shifted tectonic microplates gently overlapping the northern flank of Kura flexure along Ganykh-Ayrichay-Alyat thrust.
Data of real-time GPS measurement of regional geodynamics indicates that pseudo-subduction of South Caucasian microplate under the North Caucasian microplate still continues during present stage of alpine tectogenesis. Among others, ongoing pseudo-subduction is indicated by data of regional seismicity which is irregularly distributed by depth (foci levels 2-6; 8-12; 17-22; 25-45 km). Horizontal and vertical seismic zoning is explained by Earth crust's block divisibility and tectonic stratification, within the structure of which the earthquake focuses are mainly confined to the crossing nodes of differently oriented ruptures, or to the planes of deep tectonic disruptions and lateral displacements along unstable contacts of the substantial complexes with various degree of competence. At present stage of tectogenesis, seismically most active are the structures of the northern flank of South Caucasian microplate, controlled by Ganyx-Ayrichay-Alyat deep thrust with "General Caucasus" spread in the west, and sub-meridian right-lateral strike slip zone of the Western Caspian fault in the east of Azerbaijani part of Greater Caucasus.