

THE ARMENIAN HIGHLAND LITHOSPHERE GEODYNAMICAL MODEL (Central Mediterranean Mesozoic Island Arcs Seismotectonics system)

MURADIAN, K.M., SARGSYAN, H.H. Institute of Geological Sciences National Academy of Sciences of Armenia; Geology Department, Yerevan State University. Yerevan, the Republic of Armenia.

It is established the Armenian Highland territory in the Central Mediterranean System to evolve on a transitional type crust as a Mesozoic Mature Island Arcs System (Seismic Convergent Margins). It was formed on the Northern active Margin of the Arabian lithosphere (of the Gondwanaland), of the Paleotethys – Mesotethys. On the Armenian Highland, from the North to the South the Geodynamical Model includes the following elements: 1) The oceanic crust of the Black Sea – Caspian central – symmetric spreading (Seismic Divergent Margins – a relic of sublatitudinal paleorift of the Mesotethys with a three-layer oceanic lithosphere). 2) The deep-sea trench (negative gravitational anomalies, deep seismic sounding (DSS-Vr-6.7-7.9 km/sec) Southern Black Sea – Southern Caspian Sea (the Minor Caucasus Vardzi – Zavaritsky – Benioff zone – a long term functioning arched zone of subduction with a positive polarity). 3) The volcanic Island Arcs (with the positive gravitation anomaly and high paleoseismicity) – Pontian – Somkhet – Karabach – Elbursian. This structure has format in strained conditions and stretches as volcanogenous zones about 2000 km as a chain of volcanic islands, formed in shallow water conditions. They consist of continuous homodrome rock associations, including primitive tholeiitic and calc-alkaline series. 4) The back arc-marginal basin (the strain structure, negative gravitational anomalies, DSS-Vr-2.2 to 6.5-7.7-8.2 km/sec) – with the alkali basalts volcanism and with Armenian ophiolite linear zones: Sevan, Zanguezoor, Vedi. 5) The passive margin: Arabian-Western Armenian-Central Iranian continental lithosphere.