

Hercynian Granitoids of the Greater Caucasus and Related Granophile Elements

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The Greater Caucasus is a heterogeneous segment connecting the European and Asian parts of the Alpine-Himalayan orogenic belt. Two major periods of its origin are detected: Alpine and pre-Alpine. The majority of pre-Alpine collage construction "basement", is mainly made of granitoid composition four hercynian plutonic series, namely: 1-gabbro-plagiogranite (370-375 Ma; Sm-Nd age), 2-gabbro-adamellite (317-322 Ma; U-Pb age), 3-plagiogranite-granite (314-325 Ma; U-Pb and Rb-Sr age) and 4-granite-alaskite (300-305 Ma; U-Pb and Rb-Sr age).

Each plutonic serie was formed at a definite stage of orogenic evolution, from concrete substrate in a concrete geodynamic position. At the same time they are characterized by different fluid and thermal conditions of origin and magma generation mechanism.

Granitoids of the discussed plutonic series are strongly marked by obvious regularities of granophile elements distribution. Namely: Granitoids of gabbro-plagiogranite series are marked by Mo (32ppm) and Cu (67ppm), granitoids of gabbro-adamellite series-V (165ppm) and Pb (42ppm) high concentration. In plagiogranite-granite and granite - alaskite series the composition of Sn (29ppm) and W (25ppm) is increased. All granitoids of the Greater Caucasus hercynian plutonic series are of great interest for Cr composition, which is increased regionally (from 350ppm to 550ppm).