LATE CENOZOIC GRANITOID COMPLEXES OF THE MALKO-PETROPAVLOVSK TRANSFORM FAULT ZONE: SLAB AND TRASFORM FAULTS IN THE FRONTAL ZONE OF THE KAMCHATKA ISLAND ARC SYSTEM.

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Geochemical studies of Neogenic intrusive rock complexes permitted distinguishing two groups of massifs within the Malko-Petropavlovsk transform fault zone. The first group includes massifs attributed to northwesterly striking anticlines located among Paleogene-Early Neogene (Pg-Ng1) sedimentary and volcanosedimentary sequences. Massifs of the other group are spatially associated with morderately acidic Early Neogene (Ng12) volcanics and the Alney-series magmatic complexes (Ng13-Ng2) and occur within tectonic depressions and basins. Massifs of the latter group expose at smaller area than those of the first group (~30 km2 against ~110 km2, respectively). Absolute dating of Tertiary granitoids of the region distinguished massifs of two age groups. The massifs of the first group are associated with zones of large transform faults initiated under major tectonic reorganization of the island-arc system and involve both pre- and syn-orogenic magmatic complexes. In the transform fault zone Focca-Magna (Japan) tectonically correlable with the Malko-Petropavlovsk zone, granitoid massifs were forming from Ng12 to Ng2 (14,1-5 Ma), and the Pliocene stage involved monzonitic intrusion (Sato, 1991). Massifs of the other group differ by their mineralogy and geochemistry, namely by high potassic alkalinity (monzogabbrodiorites, monzodiorites, monzogranodiorites) and higher contents of Rb, Ba, Pb, TR,U, and Th, and by presence of anorthoclase-rich feldspar, abundant Cpx, chermakite hornblende, Phl-rich micas (dark-coloured minerals), and high-Mg Ti-Mt. The rocks of the first group belong chiefly to low- and moderately potassic series and include Cpx-Opx parageneses, magnesian and aktinolite hornblende and ferric biotites. By their compositions (low HFS and high LIL, with respect to MORB), the intrusive rocks of the Malko-Petropavlovsk transform fault zone perfectly correspond to typical island arc magmatic series. However, the rocks of the second group differ from magmatic series of frontal volcanic belts of Eastern and Southern Kamchatka by broad distribution of Amph-Bi parageneses and high potassic alkalinity, which is also typical of Pliocene-Quaternary volcanics. Therefore, the Neogene history of the Malko-Petropavlovsk transform fault zone involves two stages of intrusive magmatism, Ng12 and Ng13-Ng2. The first one is associated with low-alkalic intrusion at the final evolution stage of the Pg33-Ng1 volcanic belt, and the other one is immediately related to tectonic reorganization of the island arc system and tectonomagmatic activity of the fault zone. High potassic alkalinity and high enrichment in hydroxyl minerals of intrusive rock series formed during the second stage can be related to intense fluid activity associated with magma generation. High intensity of fluids may be related to subduction of the Avachinsky fault beneath the Malko-Petropavlovsk transforms, which breaks the continuity of the subducting oceanic crust. The study was supported by grant 97-05-65671 from the Russian Foundation of Basic research. Simposium 6.1.