

ROLE OF VERTICAL REOLOGICAL ZONALITY IN STRUCTURE OF PRECAMBRIAN SUTURE ZONES

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Kolmozero-Voronya suture zone, Baltic Shield, is confined to the junction of three terranes – Murmansk, Central Kola and Keivy, and to a 500 km long regional fault. It is considered as the ophiolite suture (Nikitin, 1975), or as the Archean greenstone belt (Vrevsky, 1983). According to the new geochronological data the evolution of Kolmozero-Voronya zone occurred in the period 2925-2520 Ma (Kudryashov et al., 1999). The structure of the zone is defined by catazonal and regressive mesozonal structural parageneses. The catazonal structural paragenesis is of suture tectonic type and characterized by dynamic conditions of slipping plastic flow of NW strike. The regressive structural paragenesis is of suture cleavage tectonic type and characterized by slipping quasi-plastic flow, it inherits the primary structures. The conservation of orientation of stress field's main axes indicates the coherence of structural parageneses on the different depth levels. The stress field is realized in the combination of steep longitudinal slips and of cross reverse faults and thrusts, and in the presence of lenses assemblages separated with the slices. Such structural combination occurs in conditions of dominating compression with compensating extension. The compression was realized in slip-thrusting flow and was accompanied by basite-ultrabasite protrusions and komatiite eruption bearing Cu-Ni and As-Au ores, and by quartz porphyres with Au-Mo-Cu ores. During extension Au-specialized granodiorites and rare-element pegmatites intruded both along and cross the directive structures. The integral stress field is the result of crustal convection on “granite level” depth. The highly deformed zones like the Kolmozero-Voronja suture should be considered as the indicator of collision regime.