

CYCLIC P-T- AGE EVOLUTION OF METAMORPHISM IN GRANULITE REGIONS

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P-T conditions of metamorphism have been established for Archaean and Proterozoic granulite areas: Lapland -Kola Orogen (Central Kola granulite area, Lapland - Kolvitca granulite belt) and part of Gondwana supercontinent (Karnataka craton, Eastern Ghats mobile belt, Kerala khondalite belt). The key conclusions are follows: 1. Practically all the investigated granulite regions show multistage (3-4 stage) and retrograde - directed metamorphism. 2. Almost similar metamorphic temperatures are found in the Lapland granulite belt and Central-Kola granulite area sequences (up to 4-6 kms of thick). This temperature leveling can be explained by intensive deformation, increasing of the rock permeability, intruding of fresh portions of fluid during of uplift. 3. Granulite metamorphism show appreciable heterogeneity of the fluid regime. 4. There are not any essential differences in the P-T trends of the metamorphism between Archaean granulite area and Proterozoic mobile belts. 5. The model of cyclic alternation of stable periods of subsobaric cooling and short episodes of a tectono-thermal activation during uplift is proposed for the post-pick metamorphism. . 6. The general duration of the metamorphic cycles is appreciably differ for the regions studied - 0.1-0.16 Ga for Kerala khondalite belt, about 0.4 Ga for Central Kola granulite area, 0.8-0.6 Ga for Lapland granulite belt, about 0.9-1 Ga for Karnataka craton and about 2.0 Ga for Eastern Ghats mobile belt. It is assumed that active periods of the metamorphic events (stages) have a much less duration (about 0.03-0.05 Ga) in comparison with quiet times of subsobaric cooling between them.