Geophysical Research Abstracts
Vol. 20, EGU2018-2426-1, 2018
EGU General Assembly 2018

Geodynamics interpretation of the PTX conditions of the diamond inclusions and association in different tectonic settings and their evolutions

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Advanced mantle thermobarometry for peridotites and eclogites (Ashchepkov et al., 2015; 2017) was used for systematic comparison of PTX estimates for diamond inclusions and associations (DIA) from different cratons and terranes using data base of 5000 of analyses ,
Beneath Udachnaya, the cold branches (35mW.m-2) was reconstructed for sub-Ca garnet and eclogitic diamond inclusion relicts colder geotherms 32 corresponds to 300-400 km Archaean lithospeher showing primary stratification. The convective plume geotherms for protokimberlites 8.0-6.0 GPa -1350-1500oC); alkaline picrites (5.0 GPa, 1300-1400oC); basalts (3 -2 GPa - 1200-1300oC) rarely refer to DIAmainly remelted peridotites and framesites.
East and West Daldyn terranes in Early Proterozoic granulite-orthogneous belt show similar rhythmic layering but different compositions of DIA In West subcalcic garnets, chromites and magnesian eclogite DIA dominate. In the East more fertile and ferrous peridotites and Fe- eclogites and pyroxenites predominate among the inclusions. In the Markha granulite-gneiss terrane of Upper Muna mainly Fe-Mg diamond-bearing eclogites giving hot PT branche dominates. In the mantle beneath the Nakyn field, peridotite eclogitic garnets (mainly metapelites) dominates (Spetsius et al., 2004), and rare peridotite minerals.
In the south of the Magan terrane the lower part of the SLCM is sharply depleted, the pyropes in middle varies in CaO, and many pyroxenites and eclogites. In the SCLM under the Hapchan terrane (accretion complex), the mantle peridotites are extremely depleted but thick eclogy-pyroxenite lens is highly diamondiferous
In South Africa possible the differences between individual cratons and belts. In Kaapwaal craton dunitic garnet DIA prevail eclogites at 3.5-4 GPA are Fe-rich and in deeper part are Mg-rich. In Limpopo belt garnet DIA are CaO enriched eclogites are less in Fe. The Proterozoic kimberlites like premier and Roberts Victor hot geotherms are characteristic for medium in Fe eclogites and and pyroxenites.
For the Congo Craton, peritotite pyropes are divided into CaO into three groups. Part of the peridotite inclusions, pyrope and pyroxene refers to heated branche in the middle SCLM part. For Zimbabwe depleted peridotitic and Fe – eclogitic DIA prevail. In West Africa, DIA s of the peridotites of heated type prevail.
In North America proportion of peridotite inclusions is high for Slave craton. Pyops of various types fall on a high-temperature geotherm. Diamond-bearing eclogites refer mainly to Mg- type. Archaean inclusions in Superior craton mainly fall on a low-temperature geotherm and in litho[here base to Hi-T type
In Amazonian craton of South America peridotite orthopyroxene and garnet DIA are medium-low-temperature. The medium Fe-Mg eclogites form high-temperature rising in Fe trend with decreasing pressure.
For the East European craton (Baltic, Finland), few peridotite inclusions have been found. Eclogite garnets and omphacites form a joint trend. more high-temperature for omphacites.
The greatest variations in the temperature regime and in the compositions is characterized by the ecloguite inclusions of the Kimberley craton, Australia
Supported by RFBR grant 16-05-00860a.