



PRECAMBRIAN HIGH-GRADE MOBILE BELTS

Extended Abstracts

Russian Academy of Sciences
Earth Sciences Section RAS
Science Board on Precambrian Problems
Institute of Geology, Karelian Research Centre, RAS
Geological Institute, RAS
Geological Institute, Kola Science Centre, RAS
Institute of Precambrian Geology and Geochronology, RAS
Geological Survey of Finland

PRECAMBRIAN HIGH-GRADE MOBILE BELTS

Extended Abstracts

Petrozavodsk
2014

УДК 551.24"611"(063)(036)
ББК 26.33
Р 91

Р 91 PRECAMBRIAN HIGH-GRADE MOBILE BELTS. Extended Abstracts. Petrozavodsk: KRC RAS, 2014. 123 p.

ISBN 978-5-9274-0627-2

Precambrian high-grade mobile belts (PMB) are major crustal structures preserved in ancient cratons or along their margins. The distinctive features of PMB's are large-scale, multiphase HP-UHP and HT-UHT metamorphic processes, and intense and multiple deformation. Problems in the geological structure, petrology, geochronology, geodynamics and mineralogeny of PMBs and the Earth's evolution are discussed in the Proceedings of the Conference. Special attention is given to the Belomorian and Lapland-Kola (Fennoscandian Shield) and Limpopo (African Shield) mobile belts. The PMB of the North China, Siberian and Antarctic cratons are also discussed.

The Proceedings of the Conference are of interest for geologists, petrologists and geochronologists who study the early evolution of the Earth and HP-UHP and HT-UHT metamorphic processes.

УДК 551.24"611"(063)(036)
ББК 26.33

The Conference is supported by RFBR (grant 14-05-06021).

ISBN 978-5-9274-0627-2

CONTENTS

<i>Azimov P.Ya., Serebryakov N.S.</i> Paleoproterozoic P-T history of the Chupa paragneissic belt (Belomorian mobile belt, north-eastern Fennoscandian Shield, Russia)	5
<i>Balagansky V.V., Gorbunov I.A., Mudruk S.V.</i> Palaeoproterozoic Lapland-Kola Collisional Orogen, Northern Fennoscandian/Baltic Shield	7
<i>Baltybaev Sh. K.</i> Two types of granulites and migmatites within the Svecofennian orogen (spatial-time distribution, their similarities and differences)	11
<i>Belyanin G.A., Kramers J.D., Vorster C., Knoper M., Van Reenen D.D.</i> Constraints from ⁴⁰ Ar- ³⁹ Ar and U-Pb geochronology on the timing of successive fluid events in the Southern Marginal Zone of the Limpopo Complex, South Africa	13
<i>Bozhko N.A.</i> Granulite-Gneiss belts: geodynamic implications	16
<i>Brown M.</i> Secular change in metamorphism: implications for geodynamics	18
<i>Dokukina K.A., Kaulina T.V., Van K.V., Konilov A.N.</i> High-temperature melting of high-pressure phengite-quartz veins in the Salma eclogitic rocks	22
<i>Glebovitsky V.A.</i> Granulites in the Proterozoic and Neoproterozoic mobile zones	25
<i>Gorbunov I.A., Balagansky V.V., Mudruk S.V., Sidorov M.Yu., Kartushinskaya T.V.</i> Structural evolution of an eclogite-bearing amphibolite complex, northern part of the Belomorian Province, Fennoscandian/Baltic Shield	27
<i>Ipranta and S. Andi Mangga.</i> Tectonostratigraphic and amalgamation activity of Sumatra Terranes, Indonesia	32
<i>Khodorevskaya L.I.</i> Salt fluids in granulite-facies metabasic rocks (experiment)	33
<i>Klein V.M., Systra, Y.J.</i> Occurrences of granulite metamorphism in the Paleoproterozoic crystalline basement of Estonia	36
<i>Kulakovskiy A.L., Morozov Yu.A., Smul'skaya A.I.</i> About stress-metamorphism and stress-metamorphites in shear zones (Precambrian of the Ladoga region, Karelia)	39
<i>Levitskiy V.I., Levitskiy I.V.</i> Early Precambrian granulite complexes in the South-West of the Siberian Craton	44
<i>Li Xiaoli, Zhang Lifei, Wei Chunjing</i> Metamorphic PT path and U-Pb zircon dating of Archean eclogite from Gridino, Belomorian province	46
<i>Liu F.L. and Zhang L.F.</i> The petrological study of eclogites from Chalma (Kuru Vaara), Belomorie Mobile Belts, Russia: P-T pseudosection and zircon dating	49
<i>Mikhalsky E.V.</i> Superimposed the Meso- to Neoproterozoic and the Cambrian high-grade provinces of the East Antarctic: recurrent collision vs plume-related reworking	51
<i>Mints M.V.</i> Belomorian Tectonic Province: from Mesoarchaeon to Late Palaeoproterozoic	54
<i>Mints M.V.</i> Granulite-gneiss belts as a component of the intra-continental orogens	58
<i>Mudruk S.V., Balagansky V.V., Gorbunov I.A., Raevsky A.B.</i> Major deformations in the Keivy and Strel'na terranes of the Palaeoproterozoic Lapland-Kola Collisional Orogen, Northeastern Fennoscandian/Baltic Shield	60
<i>Petrovskaya, L.S., Mitrofanov, F.P., Petrovsky M.N., Bayanova, T.B., Bazay, A.V.</i> Influence of tectonic deformation intensity on P-T parameter variations in metamorphic complexes of the Lapland-Belomorian suture of the Kola and Belomorian megaunits junction zone	62
<i>Piliugin S.M., Konilov A.N.</i> Exsolution textures of pyroxene in banded iron formation of the Central-Kola Archean granulite area - evidence of ultrahigh-temperature metamorphism?	65
<i>Pisarev G.V., Shchipansky A. A.</i> Eclogite-ultramafic assemblage from the Kuru-Vaara quarry, Belomorian belt, Baltic Shield, Russia: evidence for an Archean resurrected UHP slab	68
<i>Pystin A.M., Pystina Yu. I.</i> Curvilinearity of the Ural orogen as a consequence of structural heterogeneity of the Ural part of the European Platform	71
<i>Van Reenen D.D., Smit C.A., Roering C.</i> Multi-Cycle High-grade Metamorphism and D-P-T-t Evolution of the Central Zone of the Limpopo Belt, Southern Africa	74
<i>Van Reenen D.D., Smit C.A., Roering C.</i> Geological Control of Geotectonic Model for Evolution of the Neoproterozoic Limpopo Complex, southern Africa	76
<i>Safonov O.G., Tatarinova D.S., van Reenen D.D., Golunova M.A., Yapaskurt V.O.</i> Role of fluidized granitic intrusions in the evolution of Precambrian granulite complexes: an example from the Limpopo Belt, South Africa	80
<i>Samsonov A.V., Larionova Yu.O., Bibikova E.V., Larionov A.N.</i> Structure, composition and age of the Srednerussky fold belt, central part of the East European Craton	83
<i>Sharkov E.V., Chistyakov A.V.</i> High-grade complexes of the early Precambrian: Evidence from the eastern Fennoscandian Shield	86

<i>Shchipansky A.A.</i> Belomorian ultramafic-eclogite assemblage: missing link on the way to diamonds in the rough from Archean cratonic lithosphere keels	88
<i>Shchiptsov V.V.</i> Major types of metamorphogenetic industrial mineral deposits of the Karelia-Kola region . . .	90
<i>Sibelev O.S.</i> Metaenderbites of the Gridino eclogite-bearing mélangé zone, Belomorian mobile belt	92
<i>Sidorov M.Yu., Voloshin A.V., Savchenko E.E., Selivanova E.A.</i> Corundum mineralization in the eclogites of Kuru-Vaara, Belomorian Province, Baltic (Fennoscandian) Shield	94
<i>Skublov S.G., Melnik A.E., Berezin A.V.</i> Paleoproterozoic age of the Belomorian Mobile Belt eclogites	97
<i>Slabunov A.I.</i> Belomorian high-grade metamorphic belt of the Fennoscandian Shield as superposition of Archean and Paleoproterozoic collision orogenes	100
<i>Slabunov A.I., Nazarova D.P., Bibikova E.V.</i> Archean paragneisses from the Yena segment of the Chupa belt, Belomorian Province: new isotopic and geochronological data	104
<i>Stepanova A.V., Stepanov V.S., Larionov A.N., Azimov, P.Ya.</i> Paleoproterozoic gabbro-anorthosites of the Belomorian province, Eastern Fennoscandian Shield: age, petrology and tectonic implications.	106
<i>Sukhorukov V.P., Turkina O.M.</i> Hypersthene-sillimanite assemblage in gneisses of Angara-Kan granulite block: occurrence of UHT metamorphism on Yenisey ridge	108
<i>Travin V.V.</i> Structural position of eclogitized basites and eclogitization processes of the village Gridino area, the Belomorian mobile belt	110
<i>Turkina O.</i> Paleoproterozoic granitoid magmatism of granite-greenstone and granulite-gneiss terranes of the south-western Siberian craton	112
<i>Varlamov D.A., Podlesskii K.K.</i> Internet-oriented database for sapphirine-bearing mineral assemblages from high grade complexes	114
<i>Volodichev O.I.</i> Evolution of metamorphic processes in the Belomorian mobile belt	115
<i>Volodichev O.I., Slabunov A.I., Li Xiaoli, Maksimov O.</i> Archean eclogites and zoisitites of the Gridino eclogite-bearing complexes: geology, petrology and geochronology.	117