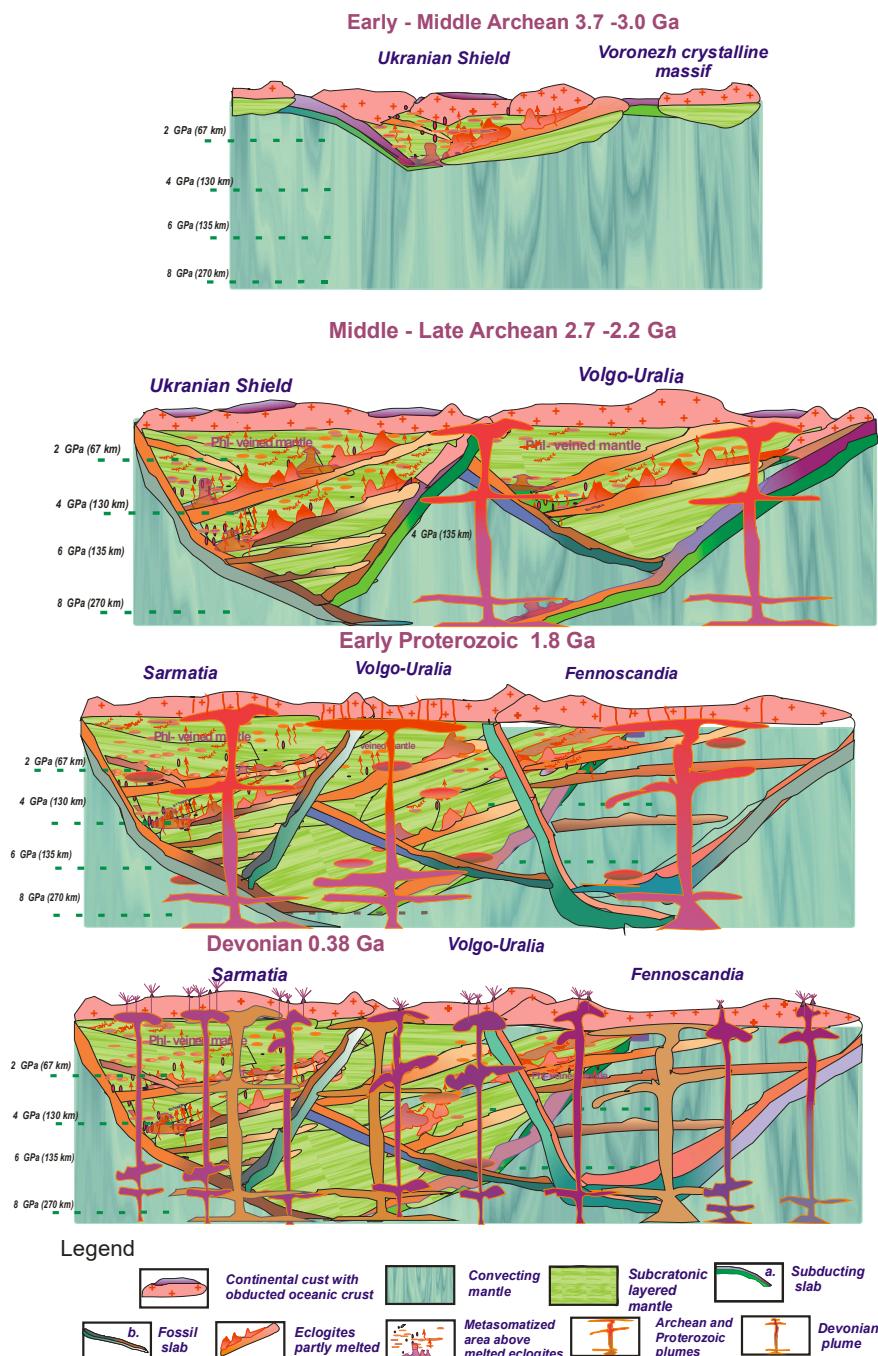


## Session description

The origin and evolution of the continental lithosphere is closely linked to changes in mantle dynamics through time, from its formation through melt depletion to multistage reworking and reorganisation related to interaction with melts formed both beneath and within it. Understanding this history is critical to constraining terrestrial dynamics, element cycles and metallogeny. We welcome contributions dealing with: (1) Reconstructions of the structure and composition of the lithospheric mantle, and the influence of plumes and subduction zones on root construction; (2) Interactions of plume- and subduction-derived melts and fluids with continental lithosphere, and the nature and development of metasomatic agents; (3) Source rocks, formation conditions (P-T-fO<sub>2</sub>) and evolution of mantle melts originating below or in the mantle lithosphere; (4) Deep source regions, melting processes and phase transformation in mantle plumes and their fluids; (5) Modes of melt migration and ascent, as constrained from numerical modelling and microstructures of natural mantle samples; (6) Role of mantle melts and fluids in the generation of hybrid and acid magmas. These topics can be illuminated using the geochemistry and fabric of mantle xenoliths and orogenic peridotites, mantle-derived melts and experimental simulations.



Dear participants of session GD4.3/GMPV4.5

**Geochemical and geodynamic perspectives on the origin and evolution of deep-seated mantle melts and their interaction with the lithosphere**

Conveners : Igor Ashchepkov; Sonja Aulbach, Kate Kiseeva, Evgenii Sharkov

We will start the discussion at 8:30 CET on Monday 5May, and it will last until 12:30 CET, although the chat will remain active for 30 min more. This is how we plan to carry on the session:

- Every contribution will get about 5-10 minutes of discussion • The conveners will introduce the contribution (title, authors,..)
- The presenting authors will give a short summary/introduction (2-3 sentences) of their work (@ authors, please prepare these in advance).
- Discussion with participants If time permits, we will have a more general discussion after all contributions have been presented. Here's the order of the presentations

Chat time: 8:30–10:45

Chair person Kate Kiseeva

**The transition between solitary wave and diapir emergence from a high porosity disturbance in two-ph[...]**

**Janik Dohmen** and Harro Schmelting

**The oxygen content of sulphide inclusions in diamonds and its use as a mantle geothermometer**

**Sumith Abeykoon** et al.

**Syenite formation after TTG gneiss: evidence from the Madiapala massif (Limpopo complex, South Afric[...]**

**Natalia Seliutina** et al.

**Modeling of magmatic channel formation in thin lithosphere areas**

**Yuri Perepechko** et al.

**Features of heat and mass transfer processes under the Avachinsky volcano (Kamchatka)**

**Grigory Kuznetsov** and Victor Sharapov

**Evolution from lithospheric to sub-lithospheric potassic liquids with sulfide droplets in Wudalianch[...]**

**Irina Chuvashova** et al.

**Accommodation of the Cenozoic Tunka Rift Valley at the Ordovician Slyudyanka Collision Zone: insight[...]**

**Tatyana Yasnygina** et al.

**Mantle source characteristics of Triassic alkaline lavas within the Antalya Nappes, SW Turkey**

**Martha Papadopoulou** et al.

**Unusual Garnet Megacryst with a partly-crystallized melt inclusion from Cenozoic alkali basalts of S[...]**

Anna Aseeva and Oleg Avchenko

**Criteria of the mantle metasomatism intensity and diamond grades of kimberliotes**  
Alexander Ivanov et al.

**Development of deep-seated magma sources throughout the Earth's history: Evidence from evoluti[...]**  
Evgenii Sharkov et al.

**Crust-mantle systems of magmatic complexes of Sikhote-Alin' (Far East, Russia)**  
Nina Gorelikova et al.

**The timescale of the endogenous processes and PT conditions of garnet, biotite, and plagioclase equi[...]**  
Elena Nitkina et al.

**Evolution and metallogenic settings of the Pados-Tundra chrome-bearing ultramafic complex, Kola Peni[...]**  
Pavel Serov et al.

**Sr-Nd-C-O isotope composition of carbonatites of the Petyayan-Vara REE deposit (Vuoriyarvi, Kola Reg[...])**  
Evgeniy Kozlov and Ekaterina Fomina

We have 9 minutes or less for each presentation

Chat time: 10:45–12:30

Chair person Igor Ashchepkov

**The Zhidoy massif of ultrabasic-alkaline rocks and carbonatites: its geochemical features, sources a[...]**  
Nikolai Vladykin and Natalia Alymova

**Ore-geochemical specialization and sources of Ural and Timan carbonatite complexes**  
Irina Nedosekova and Nikolai Vladykin

**Mineral assemblages and xenolith cargo in the Storkwitz carbonatite (Delitzsch Complex, Germany)**  
Semen Kovalev et al.

**Mafic alkaline ring Yllymakh massif , Aldan shield, Yuakutia, geochemistry and geochronology**  
Sergei Sablukov et al.

**Mineralogy and geochemistry of the inclusion-bearing Cr-pyropes from the Chompolo lamprophyres, Alda[...]**  
Evgeny Nikolenko et al.

**Amphibole bearing mantle beneath Leningrad kimberlite pipe, West Ukukit field, NE Yakutia**  
Igor Ashchepkov and Svetlana Babushkina

**Mantle xenoliths from Zapolyarnayay pipe comparison to Novinka pipe Upper Muna freld Yakutia**

**Igor Ashchepkov et al.**

**Bumerang pipe Ary Mastakh field Upper Anabar region Yakutia – relatively fertile mantle  
in th[...]**

**Sergei Kostrovitsky and Igor Ashchepkov**

**Kimberlitic Zircons from the Northern Rianabarie**

**Svetlana Babushkina et al.**

We are looking forward to meeting you in the session chat box!