



LITHOSPHERE 2024 Symposium Programme

Tuesday, Nov 12

12:00–13:00 Registration and hanging up posters, Vuorimiehentie 5, Espoo, ground floor

13:00–13:05 Opening: Suvi Heinonen

**13:05–13:15 Jarkko Koskinen, Deputy Director General, National Land Survey
Aku Heinonen, Research Director, Geological Survey of Finland**

13:15–14:30 Session 1: Fennoscandian crustal development

Chair: Toni Veikkolainen

13:15–13:40 J. M. Pownall, K.A. Cutts, K. Hiltunen & V. Yliknuussi

The Lapland Granulite Belt: new P–T–t results and tectonic ideas

13:40–14:05 T. Slagstad, E.A.F. Østnes & B.E. Sørensen

Tectonic assembly of the SW Fennoscandian margin

14:05–14:30 J.D. Solano-Acosta, A. Soesoo, R. Hints & S. Graul

Is the Estonian Alutaguse Section of Eastern Fennoscandia a continuation of the Southern Svecofennian Finnish Terranes, or is it akin to the Swedish Bergslagen region?

14:30–14:55 Session 2: Poster teasers

14:30–14:40 S. Luth, J. Köykkä & E. Torgersen (Keynote poster)

Lithotectonic map of Fennoscandia: An ongoing project

14:40–14:55 Other posters, 1 slide per poster (see list below)

14:55–16:00 Coffee/Tea, poster viewing

POSTERS

- P01. S. Luth, J. Köykkä and E. Torgersen (Keynote poster):** Lithotectonic map of Fennoscandia: An ongoing project
- P02. S. Aatos and the NDCAF team:** Developing the digital core archive of Finland
- P03. T. Elminen:** Rapakivi related thermal effect in nearby shear zones in the capital area, southern Finland
- P04. A. Harjulehto, J. Kamm, P. Mishra and J. Salminen:** Three-dimensional resistivity model of Svecofennian collision zone in Bothnian region
- P05. V. Laakso and S. Heinonen:** Seismic reflection profiling for studying lithosphere in Finland
- P06. A. C. Nascimento, D. C. Oliveira and E. Heilimo:** Metamorphic insights into the Archean Basement of the Carajás Province and its Affinity with the Karelia and Kola Provinces
- P07. M. Nuppenen-Puputti, R. Kietäväinen, L. Purkamo, I. Kukkonen and M. Bomberg:** Rock surface attaching deep biosphere microbes and their functionality (DEEPFUN)
- P08. C. Patzer, T. Luhta, M. Cyz, E. Koskela, V. Laakso, M. Malinowski, J. Mursu and T. Luoto:** Structural studies of Wiborg rapakivi batholith in Geoenergialoikka -project to support utilization of geothermal energy in Kymenlaakso
- P09. S. Silvennoinen, T. Luoto, J. Näränen, H. Pettersson, A. Riihelä, T. Rämö, T. Tiira, L. Tuomi, P. Uotila, J. Uusikivi and H. Vanhamäki:** International Union of Geodesy and Geophysics (IUGG)
- P10. J.D. Solano-Acosta, A. Soesoo and R. Hints:** Geophysical and Geochemical characterisation of the Märjamaa Rapakivi granite, Estonia
- P11. A. Tsampas, A. Korja, E. Moen and EPOS-Finland Consortium:** EPOS-FI - The Finnish node of the European Plate Observing System
- P12. J. Tuomiranta, C. Patzer, J. Kamm and J. Salminen:** Magnetotellurics over Kainuu belt, Finland

16:00–17:25 Session 3

Chair: Suvi Heinonen

16:00–16:25 M. Poutanen

The Contribution of the IAG to Lithosphere Research

16:25–17:25 Alireza Malehmir (Keynote)

Imaging impossible in GPS-denied environment: in-mine seismic studies for hardrock exploration

17:30–late Ice breaker

Otapas Bar, Otakaari 27, 300 m walk from the meeting venue

Wednesday, Nov 13

09:00–10:35 Session 4: Modelling in different scales and Ds

Chair: Perttu Mikkola

09:00–09:35 S. Luth & J. Jönberger (Invited)

3D geological modelling and combined XCT-XRF drill core scanning of the Enåsen Au-Cu-(Te-Ag) deposit, Central Sweden

09:35–10:00 S. Heinonen

Seismic reflection profiling in hardrock terrains: interpreting complex reflectivity patterns in Fennoscandia

10:00–10:25 M. Malinowski, T. Niiranen, T. Luhta & L. Sito

A new regional reflection seismic profile across the Peräpohja belt, northern Finland

10:25–10:50 D. Whipp, M. Häkkinen, L. Tuikka, A.-K. Maier, E. Muñoz & S. Laaksonen

Exploring the life and death of ancient orogens

10:50–11:35 Coffee/Tea, poster viewing**11:35–12:10 Gregor Hillers (Invited)**

Passive seismic imaging with dense arrays

12:10–13:00 Session 5: Fractures, cleavages and faults

Chair: Alan Bischoff

12:10–12:35 J. Engström, P. Jänkäväära, N. Nordbäck, N. Ovaskainen, K. Nikkilä, H. Hansson, T. Kauti, P. Skyttä, E. Heilimo & A. Bischoff

How does preexisting ductile structures effect brittle deformation in crystalline bedrocks, insights from Kisko and Paimio area in SW Finland?

12:35–13:00 K. Nikkilä, P. Skyttä, N. Nordbäck & J. Engström

Generation of faults and associated damage zones in crystalline rocks

13:00–14:00 Lunch, poster viewing**14:00–15:15 Session 6: Geothermal**

Chair: Kaisa Nikkilä

14:00–14:25 A. Bischoff, D. Carbajal, M. Heap, S. Vuoriainen, T. Luoto, T. Reuschlé, J. Kuva & K. Cutts

Crystal clear: A petrophysical databank of crystalline rocks for assessing deep geothermal reservoirs in Finland and beyond

14:25–14:50 D. Carbajal-Martinez, A. Bischoff, S. Vuoriainen, T. Luoto, E. M. Jolis, J. Kuva, J. Engström, E. Kortunov & Nicklas Nordbäck

Fracturing and Hydrothermal Alteration in Faulted Granites: Impact on Fluid Flow and Geothermal Energy at the Kivetty Site
14:50–15:15 **N. Nordbäck, A. Bischoff, K. Nikkilä, D. Carbajal-Martinez, J., Engström, P. Skyttä, A. Nicol, N. Ovaskainen & S. Burchardt**
Strike-Slip Brittle Deformation and Hydrothermal Alteration in the Vehmaa Rapakivi Batholith: Insights into Reservoirs in Crystalline Rocks and Geothermal Potential in Southern Finland

15:15–15:40 EPOS movie moment

15:40–16:10 Coffee/Tea, poster viewing

16:10–17:25 Session 7: Raw materials

Chair: Jochen Kamm

16:10–16:35 **S. Graul, S. Nirgi, A. Soesoo, J-D, Solano-Acosta, R. Hints, T. Hands & C. Hernandez-Moreno**
DEXPLORE Horizon EU project: Investigation of CRM potential of Estonian basement

16:35–17:00 **Soesoo, A.; Nirgi, S. & Acosta, J.**
Critical raw materials of the Estonian Precambrian basement: Any new targets?

17:00–17:25 **N. Coint, E. T. Mansur, Y. Wang., A. C. R. Miranda, F. Szitkar, P. Acosta-Gongora, V. Baranwal, A. Nazuti & M. H. Huyskens**
Prospectivity for Fe-Ti-P-(REE) mineralization in alkaline monzonite and syenite: example from the Southern Oslo Rift, Norway

18:30 Conference Dinner. i.e. beer and something
Oluthuone Kaisla, Vilhonkatu 4, near metrostation Helsingin Yliopisto

Thursday, Nov 14

09:00–10:35 Session 8: Deep geobiosphere

Chair: Riikka Kietäväinen

09:00–09:25 **I.T. Kukkonen, R. Kietäväinen, V. Nenonen, M. Bomberg, H. Miettinen, M. Nyysönen, M. Nuppenen-Puputti, A. Karjalainen & J. Rytönen**
Research application of the St1 superdeep boreholes in Espoo, southern Finland

09:25–09:50 **H. Miettinen, M. Nyysönen, M. Nuppenen-Puputti, R. Kietäväinen, I. Kukkonen, V. Nenonen, A. Karjalainen, J. Rytönen & M. Bomberg**

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- Microbiological aspects of sampling the St1 superdeep boreholes in Espoo, southern Finland
- 09:50–10:15 **M. Bomberg, M. Nuppenen-Puputti, L. Purkamo, M. Nyysönen, H. Miettinen & R. Kietäväinen**
Biological sulfur cycling in Finland's deep groundwater
- 10:15–10:40 **M. Nyysönen, M. Nuppenen-Puputti, M. Kuusiluoma, A. Delgado, M. Bomberg & R. Kietäväinen**
Dark oxygen in the deep geobiosphere of the geological repository (DODGE)
- 10:40–11:10 Coffee/tea**
- 11:10–12:25 Session 9: Magmatism through time**
Chair: David Whipp
- 11:10–11:35 **A. Costa do Nascimento, D. Carvalho de Oliveira & E. Heilimo**
Origin and tectonic significance of Archean sanukitoids: correlation between the Carajás and Karelia Provinces
- 11:35–12:00 **A.E. Johnson, J.S. Heinonen & O. Eklund**
Intraorogenic magmatism in southern Finland – new evidence from geochemistry and dating
- 12:00–12:25 **O. Teräs, K. Nikkilä, P. Mikkola, A. Kotilainen, O. Eklund & O.T. Rämö**
Influence of the Transscandinavian Igneous Belt on the post-orogenic shoshonitic magmatism in Finland
- 12:25–13:00 Closing of symposium, forthcoming meetings, other short announcements and poster award**
Chair: Suvi Heinonen
- 13:00– Lunch**