THE 33RD NORDIC GEOLOGICAL WINTER MEETING

10-12. JANUARY 2018 KGS. LYNGBY, DENMARK

HOSTED BY

GEOLOGICAL SOCIETY OF DENMARK & TECHNICAL UNIVERSITY OF DENMARK



DTU Civil Engineering Department of Civil Engineering





CARL§BERG FOUNDATION

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LOCATIONS OF AUDITORIUMS, PLENARY HALL, LUNCH, POSTERS AND COFFEE BREAKS

WELCOME TO THE 33RD NORDIC GEOLOGICAL WINTER MEETING

It is our pleasure to welcome you to the 33rd Nordic Geological Winter Meeting at the Technical University of Denmark (DTU), Kongens Lyngby, Denmark – January 10-12, 2018 organized by the Geological Society of Denmark.

The meeting aims to cover a wide range of geological topics and offers a venue for presenting research and networking with colleagues from the Nordic countries.

The venue of the conference is the Technical University of Denmark, who has also co-organized the conference. The Technical University is located in Kongens Lyngby, just a little North of Copenhagen.

We have handpicked and invited some very special Plenary presentations, Kristin Rangnes (UGGp Council and GGN ExB Member, director for Gea Norvegica UNESCO Global Geopark, University of Oslo, Norway), Sune Nielsen (Associate Scientist at Woods Hole Oceanographic Institution, MA, USA) and the winner of the Nordic Geoscientist Award, that we hope will fascinate you - There is one plenary a day and they are all hosted in the Oticon Auditorium.

We hope you will join us for the Ice Breaker Party that we have organized Wednesday Evening at GEOCENTER Copenhagen, which is located in the center of Copenhagen close to the Geological Museum and the Art museum. At the Icebreaker we will announce the winner of the Best Student Poster Award.

Thursday we have organized a conference dinner at Langelinje Pavilionen by the waterfront of Copenhagen. At the conference dinner we will announce this year's winner of the Nordic Scientist Award.

Last but not least, we want to show great gratitude to our sponsors, which are listed on the first page of this booklet, to the organizing committee and to the scientific committee.

We wish you all a pleasant conference.



ORGANIZING & SCIENTIFIC COMMITTEES

ORGANIZING COMMITTEE

ORGANIZING COMMITTEE CHAIR: Louise Belmonte, Rockwool

Thomas Guldborg Petersen & Line Leth Christiansen, Technical University of Denmark

& Board of the Geological Society of Denmark:

Karen Hanghøj, Jørgen Overgaard Leth, Joakim Stiel Korshøj, Tod Waight, Sandra Bollwerk, Sara Edith Hoffritz, Anette Petersen, Verner Brandbyge Ernstsen, Mahtab Yamininia, Katrine Juul Andresen, Catharina Frost Lerche, Karina Krarup Sand, Asta Fabricius Jørgensen and out secretary Lena Ali.

SCIENTIFIC COMMITTEE

SCIENTIFIC PROGRAM COMMITTEE CHAIR: Karen Hanghøj, EIT RawMaterials

1. Igneous Rocks and Processes: Paul Martin Holm, University of Copenhagen

2. Metamorphic rocks and processes: Thorsten Nagel, Aarhus University

3. Sedimentary rocks and processes: Ida Fabricius, Technical University of Denmark

4. Tectonics and Structural Geology: Pierpaolo Guarnieri, Geological Survey of Denmark and Greenland, GEUS

5. *Mineralogy:* Tonci Balic Zunic, University of Copenhagen

6. Paleontology: Nicolas Thibault, University of Copenhagen

7. Climate: Camilla Snowman Andresen, Geological Survey of Denmark and Greenland, GEUS

8. Quaternary Geology: Nicolaj Krogh Larsen, Aarhus University

9. Economic Geology: Thomas Ulrich, Aarhus University

10. Engineering and Environmental Geology: Joakim Korshøj, Geo

11. Hydrogeology: Peter Engesgaard, University of Copenhagen

12. Geophysics: Giampiero laffaldano, University of Copenhagen

13. High and Low Temperature Geochemistry, Cosmochemistry and

Geochronology: Karina K. Sand, Nano-Science Center, University of Copenhagen

14. Hydrocarbon Geology: Jørgen Bojesen-Koefoed, Geological Survey of Denmark and Greenland, GEUS

15. Marine Geology: Paul Knutz, Geological Survey of Denmark and Greenland, GEUS

16. Geomorphology: Verner B. Ernstsen, University of Copenhagen

17. Education, Communication, Preservation and Geoheritage: Anette Petersen, GEON

18. Others: Anette Petersen, GEON

PRACTICAL INFO

If you need information on how to get back and forth from Kongens Lyngby and Copenhagen or where to find a specific room etc., please contact one of our student helpers for help. You can also always go to the registration/information desk in the conference venue.

See also the pages with locations in the back of this booklet.

Should you wish to attend the conference dinner Thursday night, you are welcome to buy any leftover tickets at the registration/information booth.

Are you doing an ORAL PRESENTATION?



- The time allocated for each oral presentation is 15 minutes 12 minutes for presentation and 3 minutes for questions.
- Keynote speakers have twice this time, 30 minutes in total 25 minutes for presentation and 5 minutes for questions.

Each communication session will be moderated by a convener who will ensure the smooth running of the session. All presenters should meet with their session conveners in the room where their presentation will take place 30 minutes before the whole session is due to begin.

In the presentation rooms, you can upload and test your presentation prior to the first session of the day or during one of the breaks **prior** to your own session. A student helper will be present at the computer from which the presentations will run. We recommend that you use one of the breaks to upload your presentation, since this will not be possibly when the presentations of your session has started.

Are you doing a **POSTER PRESENTATION**?

- Pushpins for the attachment to poster board will be provided.
- Posters are to be displayed all through the conference. It should be put up Wednesday morning.
- All presenters of posters participating in the Student Poster Award competition need to be present in the coffee break Wednesday morning from 10.00-11.00. All other poster presenters need to be present at their poster in the coffee break on Thursday morning from 10.00-11.00.

SESSION LIST (LOCATION OF ORAL PROGRAMME IN ITALICS)

1. IGNEOUS ROCKS AND PROCESSES

- 1.1. Hotspots and intraplate magmas: Mantle sources, magmatic processes and metasomatism (page 18)
- 1.2. Volcanism in the North Atlantic, from breakup to current time (page 18)
- 1.3. Understanding Large Igneous Provinces and associated rapid environmental changes: from the North Atlantic Igneous Province and beyond (page 19)
- 1.4. Tephra markers in the circum North Atlantic area (page 21)
- 1.5. New trends in the study of the crystallisation and evolution of layered matic complexes (page 21)
- 1.6. Alkaline magmatism, carbonatites and associated mineral resources (page 22)
- 1.7. Magmatic Plumbing Systems (page 23)
- 1.8. Building Baltica (page 24)
- 1.9. Micro-beam frontiers in magmatic, metamorphic, and hydrothermal systems (page 25)
- 1.10. Geochemistry and modeling of Igneous Systems (page 26)
- 1.11. Open session on petrology and geochemistry (page 27)

2. METAMORPHIC ROCKS AND PROCESSES

- 2.1. Geodynamic and geological evolution of the Arctic (page 28)
- 2.2. Deformation and metamorphism of rocks: Microstructures, processes, and physical properties (page 29)

3. SEDIMENTARY ROCKS AND PROCESSES

- o 3.1. Sedimentology posters (only posters)
- 3.2. Depositional basins (page 30)
- o 3.3. Composition of siliciclastic rocks (page 31)

4. TECTONICS AND STRUCTURAL GEOLOGY

- 4.1. Trans-Atlantic correlation of Proterozoic collisional belts and Paleoproterozoic Metallogeny of the Arctic (page 32)
- 4.2. Caledonian orogenic cycle: the Greenland-Svalbard-Scandinavia connection (page 33)

- 4.3. Evolution of the North Atlantic margin: from Mesozoic rifting to Cenozoic inversion (page 33)
- 4.4. Vertical movements, changes in plate motion and mantle dynamics: observations and models in the north-east Atlantic domain (page 35)
- 4.5. Open Session: Structural Geology and Tectonic (page 35)

5. MINERALOGY

5.1. Mineralogy and its applications (page 36)

6. PALEAONTOLOGY

- 6.1. Paleozoic and Mesozoic stratigraphy, paleoceanography and paleoclimate (page 37)
- 6.2. Open session in Palaeontology, palaeoecology and paleoenvironments (page 38)

7. CLIMATE

• 7.1. Climate from the Palaeogene to the Anthropocene - bridging timescales and approaches (page 39)

8. QUATERNARY GEOLOGY

- 8.1. Ice and climate history in the Arctic and subarctic (page 40)
- 8.2. Glacial processes, deposits and landforms (page 41)
- 8.3. Open session Quarternary geology (page 42)

9. ECONOMIC GEOLOGY

- 9.1. Circular economy (page 43)
- 9.2. Mineral resources and deep-sea mining in international and national seabed areas (page 43)
- 9.3. Open Session: Economic Geology (page 44)

10. ENGINEERING AND ENVIRONMENTAL GEOLOGY

- 10.1. Geohazards in the Nordic and Arctic regions (page 45)
- 10.2. Open session Engineering and environmental geology (page 46)

11. HYDROGEOLOGY

- 11.1. Groundwater transport in cold, changing climates: theory, experiments, models (page 47)
- 11.2. Groundwater surface water interaction; chemical and quantitative impacts on rivers, lakes, wetlands, fjords and coastal areas (page 47)

- 11.3. Integrated Hydrological Modeling (page 49)
- 11.4. Open session Hydrogeology (page 49)

12. GEOPHYSICS

• 12.1. Open session in Geophysics (page 50)

13. HIGH AND LOW TEMPERATURE GEOCHEMISTRY, COSMOCHEMISTRY AND GEOCHRONOLOGY:

- 13.1. Geomicrobiology of the past and present (page 51)
- o 13.2. Bio-mineral interactions (page 51)
- 13.3. Inorganic Geochemistry (page 52)

14. HYDROCARBON GEOLOGY AND ENERGY

• 14.1. Geothermal energy and CO2 storage (page 53)

15. MARINE GEOLOGY

- 15.1. Tectonic, geodynamic, oceanographic, and cryospheric evolution of the Arctic Ocean from Mesozoic to present day (page 54)
- 15.2. Paleo-landscape analysis based on high-resolution marine data (page 54)
- 15.3. The Quaternary geology of the North Sea Basin (page 55)
- 15.4. Open session Marine Geology (page 55)

16. GEOMORPHOLOGY

- 16.1. Remote Sensing Digital mapping, remote sensing and 3d models in Earth Science (page 56)
- 16.2. Holocene coastal morpho-sedimentary systems: Archives, processes and forcing mechanisms (page 56)
- 16.3. Lidar in Geomorphology (page 57)
- o 16.4. Open session in Geomorphology (only posters)

17. EDUCATION, COMMUNICATION, PRESERVATION AND GEOHERITAGE

• 17.1. Education, communication, preservation and Geoheritage (page 58)

18. OTHER TOPICS

• 18.1. Other Sessions (only posters)

PROGRAMME OVERVIEW

TUESDAY JANUARY 9TH

12.00-17.00Registration at Geocenter Copenhagen – Øster Voldgade 10, 1350 CopenhagenGeological City walk at 14.00-16.30.

WEDNESDAY JANUARY 10TH

08.00-09.00 Registration at DTU building 101

ROOM #	S 1	S2	S4	S8	S9	\$10	S12	MEETING ROOM 1	MEETING ROOM 2
09.00-10.00		Ope	ening Cere	emony an	d Plenary t	alk by Kristin	Rangnes,	Location: OTICC	И
10.00-11.00	Coffee break with Poster Session 1, Location: Glassalen								
11.00-13.00	Session	Session	Session	Session	Session	Session	Session	Session 4.1	Session
	1.5	8.1	6.1	3.3	1.8	10.2	16.1		11.1+2
13.00-14.00	Lunch, Location: Cantina								
14.00-15.30	Session	Session	Session	Session	Session	Session	Session	Session 4.1	Session
	1.6	8.1	6.2	3.2	1.8	10.2	16.2		11.3+4
15.30-16.00	Coffee break, Location: Mødecenter								
1/ 00 17 00	Session	Session		Session	Session		Session		
16.00-17.00	1.6	8.1		3.2	1.8		16.3		
18.30-21.00		Ice Break	er party a	t Geocen	ter Copen	hagen, Øste	er Voldgad	e 10, 1350 Cope	nhagen

THURSDAY JANUARY 11TH

ROOM #	S 1	S2	S4	59	S10	\$12	MEETING ROOM 1	MEETING ROOM 2		
08.30-10.00	Session 1.11	Session 17.1	Session 8.3	Session 1.2	Session 11.2	Session 4.3	Session 14.1	Session 10.1		
10.00-11.00	Coffee break at Glassalen with poster session 2									
11.00-12.00	Plenary by Sune Nielsen (Woods Hole) at OTICON									
12.00-13.00	Session 1.11	Session 13.1	Session 8.3+8.2	Session 1.2	Session 11.2	Session 4.3	Session 4.2	Session 10.1		
13.00-14.00	Lunch, Location: Cantina									
14.00-15.30	Session 1.7	Session 13.2	Session 8.2	Session 1.10	Session 1.9	Session 4.3+4.4	Session 4.2	Session 10.1		
15.30-16.00	Coffee break									
16.00-17.00	Session 1.7	Session 13.3	Session 8.2	Session 1.10	Session 1.9	Session 4.4	Session 4.2			
19.00-23.00	Conference Dinner at Langelinie Pavillonen, Langelinie 10, 2100 Copenhagen									

FRIDAY JANUARY 12 TH											
ROOM #	S1	S2	S4	S9	\$10	\$12	MEETING				
09.00-10.30	Session 1.4	Session 5.1	Session 15.3	Session 1.3	Session 9.3	Session 7.1	Session 4.5				
10.30-11.00		Coffee break									
11.00-13.00	Session 1.1	Session 2.1	Session 15.1+15.2	Session 1.3	Session 9.1-3	Session 7.1	Session 12.1				
13.00-13.45	Lunch, Location: Cantina										
13.45-14.45	Nordic Geoscientist Award Winner Plenary at OTICON										
14.45-16.00		Session 2.2	Session 15.1	Session 1.3	Session 9.2		Session 12.1				
	End of Conference & Beer										

SOCIAL PROGRAMME

PRE-CONFERENCE GEOLOGICAL CITY WALK

Tuesday 9th January, 14.00-16.30

2.5 hour guided walking tour around the geological/historical sites of Copenhagen. During the tour you will be introduced to a variety of rocks being part of park decorations and fences, building facades and doors, fountains and walking paths. At the same time, you will get a tour-de force in the history of Copenhagen.

The tour will end in Nyhavn, where there are excellent options for food and drinks. Dress: Practical, warm clothes, rain coat/umbrella and walking shoes

PRICE: Included in the fee, but please indicate when you register online if you wish to attend.

ICE-BREAKER PARTY

Wednesday 10th January 18.30-21.00

GeoCenter Denmark, Øster Voldgade, 1350 Copenhagen Dress: Informal PRICE: Included in the fee, but please indicate when you register online if you wish to attend. Remember to bring your name badge in order to enter the party.

DINNER AT LANGELINIE PAVILLONEN

Thursday 11th January 19.00-23.00

The current Langelinie Pavillonen is designed by architect couple Eva and Nils Koppel, two of the most prominent post-war Danish architects. It is wonderfully located on the waterfront with the unrivalled views of The Little Mermaid, the fortress Kastellet and the historical Copenhagen harbour. With its superb cuisine, the evening is bound to be a great experience!

A bus will transport the dinner guests from the conference center at 18.15 to the dinner location.

The winner of the Nordic Geoscientist award will be announced at the dinner.

Dress: Informal – a light coat may be useful

PRICE: DKK 670 (€ 90).

NORDIC GEOSCIENTIST AWARD

The Nordic Geoscientist Award will be presented every second year in connection with the Nordic Geological Winter Meeting. The Award will be granted to a Nordic geoscientist who has, in the course of his/her career, been strongly involved in the society around us, as well as in specific fields in the geosciences.

All members of the Nordic geological societies have been able to propose candidates. A jury, consisting of the leaders of each Nordic geological society and the directors of each Nordic geological survey have evaluated and decided on this year's award winner. The prize will consist of a framed diploma and an engraved plate of stone. The winner will be announced Thursday at the Conference Dinner and the winner will Friday give a plenary lecture at 14.00-14.45 at the Oticon Room.

BEST STUDENT POSTER AWARD

The award for the Best Student Poster is evaluated on Wednesday at the Poster Session between 10.00-11.00.

The winner(s) will be announced at the Ice Breaker same evening.

MEETINGS

MEETING OF ADMINISTRATIVE BOARD OF BOREAS

Wednesday 16.30-17.30 in Room S2

NORQUA MEETING

Thursday 17.00-18.00 in Room S4

OPEN DISCUSSION TOWARDS A REGIONAL IAH NORDIC GROUP

Thursday 14.00-15.30 in Room S8

SCIENTIFIC PROGRAMME

YOU CAN FIND ALL ABSTRACTS ON THE WEBPAGE.



SCAN THE QR CODE ABOVE OR GO TO:

HTTPS://TINYURL.COM/NGWMABSTRACTS

THE ABSTRACTS ARE SORTED ACCORDING TO SESSIONS WITHIN THE TOPICS, AND ALPHABETICALLY BASED ON LAST NAME OF FIRST AUTHOR.

SCIENTIFIC PROGRAMME ORAL PRESENTATIONS

TOPIC 1 IGNEOUS ROCKS AND PROCESSES

SESSION 1.1 HOTSPOTS AND INTRAPLATE MAGMAS: MANTLE SOURCES, MAGMATIC PROCESSES AND METASOMATISM

FRIDAY JANUARY 12TH LATE MORNING SESSION - ROOM \$1

CONVENERS: NINA SØAGER (UNIVERSITY OF COPENHAGEN), VALENTIN TROLL (UPPSALA UNIVERSITY), ABI BARKER (UPPSALA UNIVERSITY)

- 11.00 Keynote: The role of sublithospheric mantle sources in continental flood basalt magmatism: lessons learned from the Karoo LIP By: Heinonen, J.S.
- 11.30 Oral: Tracing of mantle heterogeneity in Karoo flood basalts using Nb-Zr-Ti-Y ratios

By: Luttinen, A.

11.45 Oral: Luenha picrites reveal a primitive mantle type plume source in the Karoo large igneous province?

By: Turunen, S.

12.00 Oral: Magmatism associated with Gondwanaland rifting: Evidence from Iraq Zagros Suture Zone

By: Ismail, S.

- 12.15 Invited: Birthing an ocean island rift: mantle fingers or lateral flow? By: Deegan, F.
- 12.30 Oral: The important distinction between ancient HIMU and young HIMU-like sources in intraplate magmatism

By: van der Meer, Q.

12.45 Oral: Assessing primary vs. secondary geochemical fingerprints of Icelandic basalts using high-Fo# olivine crystals By: Rasmussen, M.B.

SESSION 1.2 VOLCANISM IN THE NORTH ATLANTIC, FROM BREAKUP TO CURRENT TIME

THURSDAY JANUARY 11TH EARLY & LATE MORNING SESSION- ROOM S9

CONVENERS: ARMANN HÖSKULDSSON (UNIVERSITY OF ICELAND) AND THOR THORDARSON (UNIVERSITY OF ICELAND)

- 08.30 Keynote: NE Atlantic break-up and magmatism By: Lundin, E.
- 09.00 Oral: Interaction between volcanic and sedimentary transport systems in the greater Judd Basin on the North East Atlantic Margin By: Ziska H.

09.15 Oral: Geometry and temporal development of the Faroe Islands Basalt Group in the Faroe-Shetland Basin: Seismic mapping and well correlations by chemo/lithostratigraphy

By: Riishuus, M.S.

09.30 Oral: The evolution of Hekla volcano in the 20th century: Integrating remote sensing data from the past 70 years

By: Pedersen, G.

09.45 Oral: Coast-parallel dolerite dykes along SE Greenland: Southernmost onshore evidence of the Tertiary North Atlantic Igneous Province?

By: Klausen, M.

- 12.00 Oral: Anatomy of the Sørvágsfjörd volcanic complex: Late Palaeocene explosive basaltic volcanism on the Faroe Islands By: Árting, U.
- 12.15 Oral: Structural links between the Jan Mayen Microcontinent and the central East Greenland coast prior to, during, and after breakup. By: Blischke, A.
- 12.30 Oral: A hot, top-down model for the formation of the North Atlantic Igneous Province and the Iceland hot spot

By: Petersen, K. D.

12.45 Oral: From Iceland to the Bight Transform Fault. Evolution of 1000 km of Volcanic Rifting Plate Boundary

By: Hoskuldsson, A.

SESSION 1.3 UNDERSTANDING LARGE IGNEOUS PROVINCES AND ASSOCIATED RAPID ENVIRONMENTAL CHANGES: FROM THE NORTH ATLANTIC IGNEOUS PROVINCE AND BEYOND

FRIDAY JANUARY 12TH EARLY & LATE MORNING SESSION- ROOM S9

CONVENERS: SVERRE PLANKE (CEED/VBPR, OSLO), CHRISTIAN TEGNER (AARHUS, DENMARK), AND DOUGAL JERRAM (CEED OSLO/DOUGALEARTH, UK)

09.00 Oral: The Pre-Caledonian Margin of Baltica: overview and research in progress

By: Andersen, T.B

- 09.15 Oral: The lithostratigraphy of a hyperextended domain in the magma-rich to magma-poor transition zone in the southern Pre-Caledonian LIP, Scandinavian Caledonides, Norway By: Jakob, J.
- 09.30 Oral: A fossil magma-rich rifted margin revealed in the Scandinavian Caledonides

By: Kjøll, H.J.

09.45 Oral: The pre-Caledonian Scandinavian Dyke Complex and 600 Ma plate reconstructions of Baltica By: Tegner, C.

- 10.00 Oral: Comparing the geophysical expression of the Seiland Igneous Province with the SW Barents Sea crust – indications for a LIP during opening of the lapetus ocean? By: Fichler, C.
- 10.15 Oral: U-Pb baddeleyite dating of multiple mafic dyke swarms in the Dharwar craton, India – evidence for a 30° internal block rotation during the Paleoproterozoic

By: Söderlund, U.

- 11.00 Keynote: Environmental and ecosystem responses to massive volcanism during the end-Triassic mass extinction By: Lindström, S.
- 11.30 Oral: Large-scale sill emplacement in Brazil as a trigger for the end-Triassic crisis

By: Heimdal, T.H.

11.45 Oral: Karoo LIP thermogenic degassing less important than previously estimated — new evidence from thermo-hydromechanical numerical simulations

By: Galerne, C.

- 12.00 Keynote: Fur Island in Denmark: A window into Paleocene-Eocene hyperthermals and North Atlantic volcanism By: Jones, M.
- 12.30 Oral: Evidence from Denmark for NE Atlantic pre-PETM volcanism By: Heilmann-Clausen, C.
- 12.45 Oral: Types and styles of volcanism in the North Atlantic Igneous Province: Implications towards understanding their potential climatic impact.

By: Jerram, D.A.

14.45 Oral: Improving seismic interpretation of igneous sill complexes via seismic modelling

By: Rabbel, O.

15.00 Oral: The Relationship Between Paleogene Hydrothermal Vent

Complex Diameters and Conduit Heights in the Vøring and Møre Basins Offshore Mid-Norway

By: Manton, B.

- 15.15 Oral: Release of volatiles during North Atlantic flood basalt volcanism and correlation to the Paleocene-Eocene Thermal Maximum (PETM) By: Pedersen, J.M.
- 15.30 Oral: Volcanic causes for the PETM and other past hothouse climates By: Svensen, H.H.
- 15.45 Oral: NE and NW Atlantic Paleogene Voluminous Magmatism and Global Crises: Seismic Observations and the Need for Future Scientific Drilling By: Planke, S.

SESSION 1.4 TEPHRA MARKERS IN THE CIRCUM NORTH ATLANTIC AREA

FRIDAY JANUARY 12TH EARLY MORNING SESSION- ROOM S1

CONVENERS: PROF. ÁRMANN HÖSKULDSSON (UNIVERSITY OF ICELAND) AND ESTHER RUTH GUÐMUNDSDÓTTIR (UNIVERSITY OF ICELAND)

09.00 Keynote: Tephrochronology of North Europe: A look back and prospects for the future

By: Wastegård, S.

- 09.30 Oral: Linking late Quaternary palaeoclimate records in the North Atlantic area: cryptotephras at Körslättamossen, S Sweden By: Larsson, S.
- 09.45 Oral: Tephra stratigraphy in Iceland during the Holocene By: Thordarson, T.
- 10.00 Oral: Proximal tephras from São Miguel, Azores Islands, and their links with distal sites in Europe

By: Johansson, H.

10.15 Oral: Explosive volcanic activity in Iceland during the Weichelian – Different from the Holocene? By: Guðmundsdóttir, E.R.,

SESSION 1.5 NEW TRENDS IN THE STUDY OF THE CRYSTALLISATION AND EVOLUTION OF LAYERED MAFIC COMPLEXES

THIS SESSION IS IN MEMORY OF EMELEUS

WEDNESDAY JANUARY 10TH LATE MORNING SESSION- ROOM S1

CONVENERS: TROELS F. NIELSEN (GEUS), MARIAN HOLNESS (CAMBRIDGE UNIVERSITY)

11.00 Keynote: Combined 'sedimentary' and in-situ origin for magmatic Fe-Ti-V deposits: new insights from the Skaergaard intrusion, East Greenland

By: Weatherly, S.

11.30 Oral: Sedimentary layering in mafic intrusions: the Skaergaard trough bands

By: Holness, M.

- 11.45 Oral: Late-stage melt migration in the Skaergaard Intrusion By: Honour, V.
- 12.00 Oral: Differential migration of interstitial immiscible liquids in the Skaergaard Layered Series

By: Holness, M.

12.15 Oral: Skaergaard gabbros: Fractionation and dissolution in crystal mush

By: Nielsen, T.

- 12.30 Oral: Strontium isotopes in plagioclase record magma chamber dynamics of the Skaergaard intrusion By: Hagen-Peter, G.
- 12.45 Oral: Untangling the formation of adcumulate rocks in layered intrusions: a microstructural study of the Skaergaard and Bushveld intrusions

By: Vukmanovic, Z.

14.00 Oral: Magmatic fractionation by cumulate rock formation with expulsion of residual melts: a case from the Tertiary Kærven Syenite Complex, East Greenland

By: Holm, P.M.

SESSION 1.6 ALKALINE MAGMATISM, CARBONATITES AND ASSOCIATED MINERAL RESOURCES.

THIS SESSION IS IN MEMORY OF EMELEUS

WEDNESDAY JANUARY 10TH EARLY & LATE AFTERNOON SESSION-ROOM S1

CONVENERS: ANOUK BORST (ST.ANDREWS UNIVERSITY), ADRIAN FINCH (ST.ANDREWS UNIVERSITY)

- 14.15 Keynote: The Spatio-Temporal Evolution of Hf isotopes in the Gardar: Evidence for Mid-Proterozoic Crustal Recycling? By: Finch, A.A.
- 14.45 Oral: Fluid-rock reactions in the carbonatites of the 1.3 Ga Grønnedal-Íka alkaline complex, Southwest Greenland By: Ranta, W.
- 15.00 Oral: Geochemical constraints on the formation of the Archean Siilinjärvi carbonatite-glimmerite complex, Fennoscandian shield By: Heilimo, E.
- 15.15 Oral: Clinopyroxene as a petrogenetic indicator: using integrated trace element and zoning profiles to reveal magma chamber processes in the Ditrău alkaline magmatic system By: Batki, A.
- 16.00 Oral: A review of the Transitional Layered Kakortokite (TLK), Ilímaussaq Complex, South Greenland By: Schønwandt, H.K.
- 16.15 Oral: Trace element and Nd-isotope data of eudialyte from the Kakortokite sequence of the Ilímaussaq complex suggest subsolidus remobilization of rare earth elements by magmatic fluids By: van der Ven, M.
- 16.30 Oral: Alkaline pegmatites of the Larvik Plutonic Complex what are they?

By: Sunde, Ø.

16.45 Oral: Probing the structural state of Y and Nd in eudialyte using X-ray absorption spectroscopy By: Borst, A.M.

SESSION 1.7 MAGMATIC PLUMBING SYSTEMS

THURSDAY JANUARY 11TH EARLY & LATE AFTERNOON SESSION-ROOM \$1

CONVENERS: RIKKE PEDERSEN (NORDVULK, UNIVERSITY OF ICELAND), STEFFI BURCHARDT (UNIVERSITY OF UPPSALA), OLIVIER GALLAND (PGP, UNIVERSITY OF OSLO), CHRISTIAN TEGNER (UNIVERSITY OF AARHUS)

- 14.00 Oral: Deep and shallow magma storage on Bali By: Geiger, H.
- 14.15 Oral: The relevance of sills and related flat-lying intrusions in volcanic plumbing systems

By: Galland, O.

- 14.30 Oral: Seismic Interpretation of Sill-Complexes in Sedimentary Basins: The 'Sub-Sill Imaging Problem' By: Eide, C.H.
- 14.45 Oral: How do sills become laccoliths? An answer from integrated laboratory and numerical modelling By: Schmeidel, T.
- 15.00 Oral: Syn-emplacement fracturing in the Sandfell laccolith, eastern Iceland

By: Mattsson, T.

- 15.15 Oral: Fracture networks in and around igneous intrusions on Svalbard: implications for fluid flow By: Festøy, M.
- 16.00 Oral: Impact of host rock heterogeneity on failure mechanism around magmatic intrusions By: Souche, A.
- 16.15 Oral: The effect of the host-rock rheology on dyke propagation energy balance: a numerical modelling study By: Vachon, R.
- 16.30 Oral: Dyke induced quasi-2D deformation in a Coulomb britte host
 the influence of host strength on propagation and emplacement By: Guldstrand, F.
- 16.45 Oral: Dyke tip processes and large-scale deformation: implications for geodetic modelling

By: Bertelsen, H.S.

17.00 Oral: A seismic study of the 2014-15 Bárðarbunga-Holuhraun rifting event

By: Ágústsdóttir, T.

17.15 Oral: Ground deformation in the Bárðarbunga Volcanic System, Iceland, Following the 2014-2015 Lateral Dyke, Caldera Collapse and Major Effusive Eruption 17.30 Oral: Structure and dynamics of the Krafla magma domain and its associated geothermal area: Ground deformation and magma plumbing at the Krafla Magma Testbed, Iceland By: Sigmundsson, F.

SESSION 1.8 BUILDING BALTICA

WEDNESDAY JANUARY 10TH LATE MORNING & EARLY AFTERNOON SESSION – ROOM S9

CONVENERS: ÅKE JOHANSSON (UNIVERSITY OF STOCKHOLM), TOD WAIGHT (UNIVERSITY OF COPENHAGEN), OLAV EKLUND (ÅBO AKADEMI UNIVERSITY) AND BERNARD BINGEN (NGU)

- 11.00. Keynote: Fennoscandia, Sarmatia and Volgo-Uralia: the building stones of the East European By: Bogdanova, S.
- 11.30. Oral: Polyphase, transpressive deformation of the Archean Siilinjärvi carbonatite complex, central Finland By: Högdahl, K.
- 11.45. Oral: Early Paleoproterozoic paleogeography of Karelian and Superior Cratons: new paleomagnetic and AMS data from 2.45-2.1 Ga mafic intrusions of Central Karelian and Kianta terranes

By: Lubnina, N.

- 12.00 Oral: Paleoproterozoic mafic dyke swarms in Archean Kola-Murmansk and Karelia provinces, eastern Fennoscandia: barcode comparison and implications for paleocontinental reconstructions By: Stepanova, A.
- 12.15 Oral: Trace element geochemistry and Sm-Nd isotopes of 2.1 Ga mafic magmatism in the Karelia-Kola, Wyoming and Superior cratons

By: Davey, S.

12.30 Oral: Paleoproterozoic Osnitsk–Mikashevichi-Moscow Igneous Belt (OMMB): new geochronology and petrology data for the Russian segment and tectonic implication

By: Samsonov, A.

- 12.45 Oral: Paleoproterozoic Inari orocline of northern Fennoscandia: progressive or secondary orocline By: Lahtinen, R.
- 14.00 Oral: Development of the Paleoproterozoic Svecofennian orogeny, new constraints from Central Finland By: Mikkola, P.
- 14.15 Oral: Kinematics and deformation regime of the Kynsikangas ductile shear zone, SW-Finland.

By: Reimers, S.

14.30 Oral: High-Nb and adakite-like 1.86 Ga magmatism in southern Finland

By: Kara, J.

- 14.45 Oral: Building or breaking Baltica the Svecofennian 'intraorogenic' Herräng dyke swarm, east-central Sweden By: Johansson, Å.,
- 15.00 Oral: New paleomagnetic and isotopic data for the Late Paleoproterozoic mafic intrusions in the Blekinge Province (southeastern Sweden) By: Lubnina, N.
- 15.15 Oral: 1.86-1.79 Ga magmatic events in the western East European Craton: from subduction to back-arc settings By: Skridtlaite, G.
- 15.30 Oral: Long-lived Late Paleoproterozoic to Mesoproterozoic connection of Baltica and Laurentia a paleomagnetic view By: Salminen, J.
- 15.45 Oral: Analogous Late Paleoproterozoic basement in Pomerania (N. Poland)and Blekinge (S. Sweden) the isotopic evidences By: Krzeminska, E.

SESSION 1.9 MICRO-BEAM FRONTIERS IN MAGMATIC, METAMORPHIC, AND HYDROTHERMAL SYSTEMS

THURSDAY JANUARY 11TH EARLY AND LATE AFTERNOON- ROOM \$10

CONVENERS: F.M. DEEGAN (UPPSALA UNIVERSITY), THORSTEN NAGEL (AARHUS UNIVERSITY), ANDERS SCHERSTÉN (LUND UNIVERSITY), TONNY B. THOMSEN (GEUS), VALENTIN R. TROLL (UPPSALA UNIVERSITY), TOD E. WAIGHT (UNIVERSITY OF COPENHAGEN)

14.00 Keynote: U-Pb calcite and zircon dating by LA-ICP-MS image mapping

By: Chew, D.

14.30 Oral: Promises and pitfalls of in situ Sr isotope ratio measurements by LA-MC-ICPMS

By: Hagen-Peter, G.

- 14.45 Oral: In tandem K–Ca and Rb–Sr dating of potassic minerals by LA-ICP-MS/MS: Method and prospective applications By: Sjöqvist, A.S.L.
- 15.00 Oral: Improved control on interferences in laser ablation studies utilizing N2O as a universal reaction gas: Applications to ore mineral related studies

By: Zack, T.

15.15 Oral: Explosive ocean island volcanism caused by high water contents in ocean island basalts

By: Weis, F.A.

- 16.00 Oral: Behaviour of boron isotopes during magmatic degassing: a case study from Lesbos Island, Greece. By: Thomaidis, K.
- 16.15 Keynote: Melt Inclusion studies on basaltic magmas in Iceland By: Thordarson, T.

SESSION 1.10 GEOCHEMISTRY AND MODELING OF IGNEOUS SYSTEMS.

THURSDAY JANUARY 11TH EARLY AND LATE AFTERNOON- ROOM S9

CONVENERS: JUSSI HEINONEN (HELSINKI), ERIC L. BROWN (AARHUS UNIVERSITY), CHRISTIAN TEGNER (AARHUS UNIVERSITY)

- 14.00 Keynote: Deep crustal homogenization of diverse mafic and ultramafic LIP-forming mantle melts: Lessons from the Ediacaran Seiland Igneous Province (SIP), Norway By: Larsen, R.B.
- 14.30 Oral: Enriched lithosphere contribution to the genesis of the Freetown Layered Complex (Sierra Leone): Isotope systematics of a high-Ti CAMP intrusion.

By: Callegaro, S.

14.45 Oral: Geochemistry of the Feragen ultramatic body, Central Norway.

By: Pryadunenko, A.

- 15.00 Oral: Evolution of a deep crustal magma conduit system By: Grant, T.B.,
- 15.15 Oral: Unraveling the differentiation of a flood basalt sequence using Magma Chamber Simulator By: Heinonen, J.S.

16.00 Oral: Markov Chain Monte Carlo Inversion of Mantle Temperature and Composition Beneath Iceland

By:. Brown, E.

16.15 Oral: Fe and Si isotope systematics of the Thingmuli volcano, Iceland: the roles of crystal – melt fractionation, oxygen fugacity and melt structure

By: Stausberg, N.

- 16.30 Oral: Evidence of liquid immiscibility in the 1.8 Ga Raftsund monzonite, Lofoten, Northern Norway By: Coint, N.
- 16.45 Oral: Mica chemistry a genesis indicator of the Sveconorwegian pegmatites, southern Norway

By: Rosing-Schow, N.

- 17.00 Oral: Chronology of the Nebo Granite, Bushveld Complex By: Skursch, O.
- 17.15 Oral: Geochemical discrimination criteria for indium-potential granites in the Fennoscandian Shield By: Sundblad, K.

1.11 OPEN SESSION ON PETROLOGY AND GEOCHEMISTRY

THURSDAY JANUARY 11TH EARLY AND LATE MORNING- ROOM \$1

CONVENERS: NINA SØAGER (UNIVERSITY OF COPENHAGEN), TOD WAIGHT (UNIVERSITY OF COPENHAGEN)

- 09.15 Keynote: The EARTHTIME Initiative: A community working to accelerate the development and application of integrated methodologies for the quantification of geological time. By: Condon, D.
- 09.45 Oral: Additional constraints to the evolution of the early solar system? A U-Pb systematics study of ungrouped differentiated achondrite NWA4587. By: Rydeblad, E.
- 12.00 Oral: Dendritic Core Crystallization in Minor Planets An empirically constrained Numerical Simulation Study By: Esbensen, K.
- 12.15 Oral: Age and geochemistry of granitoids in the Precambrian basement of Öland, SE Sweden – implications for the extension of the Transscandinavian Igneous Belt in the Baltic Sea region By: Salin, E.
- 12.30 Oral: Pangea assembly and its implications to the mid Permian– Triassic magmatism on the southwestern margin of South America By: del Rey, Á.
- 12.45 Oral: Sr isotope zoning in plagioclase from Cenozoic andesites from Cabo De Gata, Spain: evidence for shallow and deep contamination By: Waight, T.
- 13.00 Oral: Tourmaline textures and structures as a tracer for the magmatic-hydrothermal transition in SW England By: Drivenes, K.

TOPIC 2. METAMORPHIC ROCKS AND PROCESSES

SESSION 2.1 GEODYNAMIC AND GEOLOGICAL EVOLUTION OF THE ARCTIC

FRIDAY JANUARY 12TH LATE MORNING - ROOM S2

CONVENERS: CHRISTIAN SCHIFFER (DURHAM UNIVERSITY), GRACE SHEPHARD (UNIVERSITY OF OSLO), ARNE DØSSING (TECHNICAL UNIVERSITY OF DENMARK), CHRISTIAN TEGNER (AARHUS UNIVERSITY)

11.00 Oral: Norsk Polar Navigasjon's archive of old exploratory wells on Svalbard

By: Midttømme, K.

11.15 Oral: Tectonostratigraphic atlases: further perspective in Arctic research

By: Petrov, O.

11.30 Oral: Late Triassic sandstone provenance of the Barents Shelf; a regional comparison of preliminary detrital zircon geochronological and petrographic data

By: Harstad, T.S.

11.45 Oral: Formation and Origin determination by geochemical fingerprinting of ruby and pink sapphire from the Fiskenæsset complex, Greenland

By: Keulen, N.

12.00 Keynote: Development of the Amerasia Basin: Where are we now?

By: Pease V.

12.30 Oral: Crustal structure of the Eurekan Orogen on Ellesmere Island, Arctic Canada

By: Schiffer, C.

SESSION 2.2 DEFORMATION AND METAMORPHISM OF ROCKS: MICROSTRUCTURES, PROCESSES, AND PHYSICAL PROPERTIES

FRIDAY JANUARY 12TH EARLY AFTERNOON - ROOM S2

CONVENERS: HOLGER STÜNITZ (UNIVERSITY OF TROMSØ) AND THORSTEN NAGEL (AARHUS UNIVERSITY)

- 12.45 Oral: Connection between grain shape, chemical zonation and texture as indicator for fabric development in eclogites By: Neufeld, K.
- 14.45 Oral: The effects of confinement on reaction-induced fracturing during an hydration reaction

By: Zheng, X.

15.00 Oral: Record of a Lower Crustal Fossil Earthquake Initiated by CO2 Flux and Reaction-driven Strain Softening

By: Sørensen, B.E.

15.15 Oral: A novel gel-mediated reaction mechanism in metamorphic rocks

By: Konrad-Schmolke, M.

15.30 Oral: Shear deformation in the transformation of gabbro to eclogite: Potential key to rheological contrasts in the change from HP/UHP conditions to later amphibolite-facies deformation

By: Robinson, P.

TOPIC 3. SEDIMENTARY ROCKS AND PROCESSES

SESSION 3.2 DEPOSITIONAL BASINS

WEDNESDAY JANUARY 10TH EARLY AND LATE AFTERNOON – ROOM S8

CONVENERS: LARS HENRIK NIELSEN (GEUS)

- 14.00 Oral: When a platform-edge meets a platform: 3D sedimentary architecture of a large-scale prograding paralic system, SW Edgeøya, Svalbard. By: Anell, I.
- 14.15 Oral: Triassic of the Wandel Sea Basin, North Greenland. By: Bjergager, M.
- 14.30 Oral: Stratigraphic treasures of an "ugly duckling": towards an integrated basin model of the Lower Cretaceous Rurikfjellet Formation, Arctic Svalbard. By: Jelby, M.E.
- 14.45 Oral: Elastic moduli, stiffness and effective stress of chalk from Zealand (Denmark) and from Dan field (North Sea). By: Paci, L.
- 15.00 Oral: Flint in the Danian København Limestone Fomation By: Galsgaard, J.
- 15.15 Oral: Evidence of hyperpychally fed turbidites in a basin floor setting, Eocene of Spitsbergen, By: Grundvåg, S-A.
- 16.00 Oral: Across the Eocene-Oligocene Transition in Inland Asia: Bio-, Litho-, and Magnetostratigrapy of Ulantatal, Inner Mongolia, China. By: Wasiljeff, J.
- 16.15 Oral: A new observation of a biosiliceous opal bearing sequence in the Miocene Lark Formation in the Danish North Sea. By: Sulsbrück, H.
- 16.30 Oral: The Miocene-Pliocene Skade-Utsira aquifer, North Sea: Updated maps and new insights in depositional patterns and synsedimentary deformation By: Riis, F.
- 16.45 Oral: Aeolian silt transport processes as fingerprinted by dynamic image analysis of the grain size and shape characteristics of Chinese loess and Red Clay deposits. By: Shang, Y.

SESSION 3.3 COMPOSITION OF SILICICLASTIC ROCKS

WEDNESDAY JANUARY 10TH LATE MORNING - ROOM \$8

CONVENERS: RIKKE WEIBEL (GEUS)

- 11.00. Oral: Terrestrial paleoweathering and the presence of deep biosphere in fractured granites, Utsira High, Norwegian North Sea. By: Riber, L.
- 11.15. Oral: Quartz cementation and diagenetic effects in sandstone an analog study of Cambrian quartz arenite from Scandinavia. By: Lorentzen, S.
- 11.30. Oral: How can provenance and sorting effects be differentiated from detrital zircon data? Example from the German Triassic Buntsandstein Group.

By: Augustsson, C.

11.45 Oral: Middle Triassic siliciclastic deposits of Svalbard as a part of source to sink framework of the Arctic.

By: Czarniecka, U.

- 12.00 Oral: The diagenetic impact on reservoir sandstones of the Heno Formation in the Ravn-3 well, Danish Central Graben, Denmark. By: Pedersen, S.S.
- 12.15 Oral: Factors influencing Stylolite development and quartz cementation in the Jurassic Stø Formation. By: Mørk, M.B.E.
- 12.30 Oral: Stiffening effect from temperature and stress on sandstones from the deep North Sea Basin. By: Orlander, T.
- 12.45 Oral: Impact of meteoric-water diagenesis on reservoir quality in Paleocene turbiditic sandstones, UK Central Graben, North Sea. By: Mansurbeg, H.

TOPIC 4. TECTONICS AND STRUCTURAL GEOLOGY

SESSION 4.1 TRANS-ATLANTIC CORRELATION OF PROTEROZOIC COLLISIONAL BELTS AND PALEOPROTEROZOIC METALLOGENY OF THE ARCTIC

WEDNESDAY JANUARY 10TH LATE MORNING AND EARLY AFTERNOON – ROOM MEETING ROOM 1

CONVENERS: JOCHEN KOLB, (KARLSRUHE INSTITUTE OF TECHNOLOGY)

11.00. Keynote: Linking orogenesis across the North-Atlantic; the Grenvillian and Sveconorwegian orogens, different in style, but geodynamically coupled

By: Slagstad, T.

11.30. Oral: Linking the Umivik and Scourie dyke swarms tighter into a prelapetus plate configuration

By: Klausen, M.

11.45 Oral: Paleoproterozic volcanism of the Karrat Group

By: Sørensen, E.V

- 12.00 Oral: Indicator minerals obtained by gold sluicing in Lapland, a clue to possible deposit types in the area By: Tuisku, P.
- 12.15 Oral: A new reef-type PGE-enriched zone in the early Paleoproterozoic Näränkävaara Layered Intrusion, northeastern Finland

By: Järvinen, V.

- 12.30 Oral: The Amitsoq Plutonic Suite a newly discovered suite in the Ketilidian Orogen, South Greenland By: Baden, K.
- 12.45 Oral: Paleoproterozoic volcanogenic massive sulfide mineralization, Karrat Group, Central Kangiusap Kuua, West Greenland By: DeWolfe, Y.M.
- 14.00 Oral: Architecture of the Rinkian Orogen between Svartenhuk and Holm Ø, western Greenland By: Kolb, J.
- 14.15 Oral: Structural inheritance and basement-cover linkages within the Palaeoproterozoic Peräpohja Belt, Northern Finland By: Skyttä, P.
- 14.30 Oral: A new configuration of crustal-scale shear zones controlling copper-gold mineralization in northern Sweden By: Bauer, T.E.
- 14.45 Oral: Sniffs of 'IOCG-style(?)' chalcopyrite mineralisation in northwestern Greenland By: LaFlamme, C.
- 15.00 Oral: Drone-borne mineral exploration in Central-West Greenland: New insights from the Paleoproterozoic Karrat group By: Zimmermann, R.

SESSION 4.2 CALEDONIAN OROGENIC CYCLE: THE GREENLAND-SVALBARD-SCANDINAVIA CONNECTION

THURSDAY JANUARY 11TH LATE MORNING AND AFTERNOON – ROOM MEETING ROOM 1

CONVENERS: KAROLINA KOŚMIŃSKA (AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY)

- 12.00 Keynote: The North Atlantic Caledonides from Scandinavia and Greenland to Svalbard and the high Arctic By: Gee, D.G.
- 12.30 Oral: Are Southwestern Svalbard and the Pearya Terrane counterparts?

By: Majka, J.

- 12.45 Oral: Subduction and thrust emplacement of the Lower Seve Nappe in the Scandinavian Caledonides: Pressure-Temperature-Deformation constraints along the COSC-1 borehole in Åre By: Jeanneret, P.
- 14.00 Oral: The Seve subduction system in the Scandes By: Gee, D.G
- 14.15 Oral: UHP metamorphism in the Seve Nappe Complex in the Scandinavian Caledonides

By: Klonowska, I.

14.30 Oral: Syn-collisional Scandian extension and magmatism on the Orkney Islands, Scotland

By: Lundmark, A.M

- 14.45 Oral: A review of magmatic and metamorphic events recorded by crystalline basement of Southwestern Svalbard By: Kosminska, K.
- 15.00 Oral: Integration of palaeomagnetic, isotopic and structural data to understand Svalbard Caledonian Terranes assemblage By: Michalski, K.
- 15.15 Oral: Remnants of the pre-Caledonian Baltica rifted margin preserved in a lithologically mixed unit between Bergen and By: Jakob, J.
- 16.00 Oral: Chemistry, age and tectonic evolution of the western Trondheim Nappe Complex in the Oppdal area, Central Norway By: Dalslåen, B.H.
- 16.15 Oral: Timing of collision initiation and location of the orogenic suture in the Scandinavian Caledonides By: Slagstad, T.
- 16.30 Oral: A new tectonic model for the Seve Nappe Complex in Norrland, Sweden

By: Kjøll, H.J.

16.45 Oral: The Siljan Ring; A Lower Paleozoic petroleum system with kitchens in a Telychian rift basin, disrupted by meteor impact and rejuvenated by biological and Quaternary glacial processes By: Michelsen, J.

SESSION 4.3 EVOLUTION OF THE NORTH ATLANTIC MARGIN: FROM MESOZOIC RIFTING TO CENOZOIC INVERSION

THURSDAY JANUARY 11TH WHOLE DAY - ROOM \$12

CONVENERS: ALVAR BRAATHEN (DEPARTMENT OF GEOSCIENCES UNIVERSITY OF OSLO), ERIK SKOVBJERG RASMUSSEN (GEUS) AND HELGE LØSETH (STATOIL ASA, R&D TRONDHEIM)

08.30 Keynote: Extensional detachments, breakaway complexes and supradetachment basins in rifted margin formation: examples from offshore Mid Norway

By: Osmundsen, P.

- 09.00 Oral: The late Cenozoic evolution of the mid Norwegian Margin By: Løseth, H.
- 09.15 Oral: The source area of the Miocene Ribe Group, Eastern North Sea basin: the control of climate and tectonism. By: Rasmussen, E.S.
- 09.30 Oral: Evidence of post-breakup tectonism on the Northeast Greenland shelf: Implications for "passive" margin conditions By: Petersen, T.G.
- 09.45 Oral: The Mesozoic basin of Ramså in Northern Norway: Characteristics, Development and regional impact By: Brönner, M.
- 12.00 Oral: Mesozoic basin inversion governed by crustal extension in the Bornholm area, Sorgenfrei-Tornquist Zone, Denmark By: Graversen, O.
- 12.15 Oral: Late Cretaceous basin inversion in the Kattegat Skagerrak segment, Sorgenfrei – Tornquist Zone, Denmark, and Mesozoic – Cenozoic crustal tectonics of the eastern North Sea Basin By: Graversen, O.
- 12.30 Oral: Deltaic growth-faults of the Triassic Barents Shelf; structural style and deformation mechanisms controlling basin configuration By: Braathen, A.
- 12.45 Oral: Deep crustal structures in the northern North Sea rift: observations from new 3-D seismic reflection data By: Wrona, T.
- 14.00 Oral: Correlation of the Oligocene Pliocene succession in Norway, Denmark & UK

By: Eidvin, T.

- 14.15 Oral: Palaeostress analysis and hydrocarbon leakage potential of disparate fault sets within the Swaen Graben By: Mattos, N.
- 14.30 Oral: Influence of late Cenozoic erosion and deposition on temperature distribution beneath the north-eastern part of the Mid-Norwegian continental margin (the Lofoten-Vesterålen area) By: Maystrenko, Y.

SESSION 4.4 VERTICAL MOVEMENTS, CHANGES IN PLATE MOTION AND MANTLE DYNAMICS: OBSERVATIONS AND MODELS IN THE NORTH-EAST ATLANTIC DOMAIN

THURSDAY JANUARY 11TH LATE AFTERNOON – ROOM \$12

CONVENERS: PETER JAPSEN (GEUS), GIAMPIERO IAFFALDANO (UNIVERSITY OF COPENHAGEN), JOCHEN KNIES (NGU), JOHAN BONOW (GEOVISIONA, STOCKHOLM) OLA FREDIN (NGU), SOFIE GRADMANN (NGU)

15.00 Oral: Neotectonics in Norway

By: Olesen, O.

- 15.15 Oral: Burial and exhumation history of the Upper Jurassic sediments on Andøya, northern Norway based on AFTA and VR data By: Japsen, P.
- 16.00 Oral: Early postglacial rebound tectonics within the Tjörnes Fracture Zone, North-Iceland By: Brandsdóttir, B.
- 16.15 Oral: An underexplored method for determination of paleotemperature and burial depth.By: Beyer, C.
- 16.30 Oral: The surface below ca 900 m altitude in southern Norway was probably buried by late Mesozoic By: Chalmers, J.

SESSION 4.5 OPEN SESSION: STRUCTURAL GEOLOGY AND TECTONIC

FRIDAY JANUARY 12TH EARLY MORNING - ROOM MEETING ROOM 2

CONVENERS: PIERPAOLO GUARNIERI (GEUS)

- 09.30 Oral: Coupling of the ductile and brittle structures of the bedrock in Hyvinkää, Southern Finland By: Balogh, B.
- 09.45 Oral: Sand tectonics sand mobility linked to faulting and the influence on depositional systems By: Halvorsen, K.
- 10.00 Oral: Brittle fault systems of deep geological nuclear waste repository at Olkiluoto, SW Finland By: Nordbäck, N.
- 10.15 Oral: Target-rock weakening mechanisms during peak-ring formation of the Chicxulub impact crater inferred from IODP-ICDP Expedition 364

By: Riller, U.

TOPIC 5. MINERALOGY

SESSION 5.1 MINERALOGY AND ITS APPLICATIONS

FRIDAY JANUARY 12TH EARLY MORNING – ROOM MEETING ROOM S2

CONVENERS: TONCI BALIC-ZUNIC (UNIVERSITY OF COPENHAGEN), ANNA KATERINOPOULOU (HALDOR TOPSØE A/S)

- 09.15. Oral: Nanoscale observations of 'invisible gold' from the Olympias mine, Greece By: Kasama, T.
- 09.30. Oral: Element mobility and new paragenesis of the Ivigtut cryolite deposit, South Greenland By: Friis, H.
- 09.45 Oral: Occurrence of indium with late-stage intrusions in the Kymi granite stock, Southern Finland By: Kuusela, J.
- 10.00 Oral: The fumarolic minerals of the Fimmvörduhals 2010 eruption By: Balic-Zunic, T.
- 10.15 Oral: Plasticite, (Plas-TI-Kite) an ore mineralization from the late Anthropocine By: Nilsson, E.
TOPIC 6. PALEAONTOLOGY

SESSION 6.1 PALEOZOIC AND MESOZOIC STRATIGRAPHY, PALEOCEANOGRAPHY AND PALEOCLIMATE

WEDNESDAY JANUARY 10TH LATE MORNING - ROOM \$4

CONVENERS: SYLVAIN RICHOZ (LUND UNIVERSITY), STÉPHANE BODIN (AARHUS UNIVERSITY), NICOLAS THIBAULT (UNIVERSITY OF COPENHAGEN), MIKAEL CALNER (LUND UNIVERSITY)

- 11.00. Oral: At the boundary between the middle Albian hoplitinid and gastroplitinid ammonite provinces: linking the Arctic with northwest Europe with ammonites in North Greenland. By: Alsen, P.
- 11.15. Oral: The secret wonders of the middle Danian By: Lauridsen, B.W.
- 11.30. Oral: Stratigraphic context and environmental changes in the Tuxen and Sola Formations (Barremian-Early Aptian, North Sea): new results from high-resolution carbon and oxygen stable isotopes, major and trace elements, sedimentology and calcareous nannofossils By: Thibault, N.
- 11.45 Oral: Biostratigraphic correlation of the Cretaceous to Neogene succession of the western and eastern margins of the Labrador Baffin Seaway.
 - By: Nøhr-hansen, H.
- 12.00 Keynote: Biodiversity, climate and time resolving the scale, tempo and drivers behind the Great Ordovician Biodiversification Event By: Rasmussen, C.M.Ø.
- 12.30 Oral: Triassic biostratigraphy (ammonoids and palynology) and organic δ13C-isotope record of the Wandel Sea Basin, North Greenland By: Lindström, S.
- 12.45 Oral: Fossils and lithology of the dredged Paleozoic carbonates:
 - results of «Artic-12» expedition to the East Arctic uplifts By: Tolmacheva, T.

SESSION 6.2 OPEN SESSION IN PALAEONTOLOGY, PALAEOECOLOGY AND PALEOENVIRONMENTS

WEDNESDAY JANUARY 10TH EARLY AFTERNOON - ROOM \$4

CONVENERS: NICOLAS THIBAULT (UNIVERSITY OF COPENHAGEN), SOFIE LINDSTRÖM (GEUS)

- 14.00 Oral: Pushing research boundaries: Benefits of temperature ramped gas chromatography in EA-IRMS By: Dalby, S.
- 14.15 Keynote: Elements of Eoarchean life trapped in mineral inclusions By: Hassenkam, T.
- 14.45 Oral: Bryozoan biota as a proxy for the climatic changes in Cenozoic of West Antarctica By: Hara, U.
- 15.00 Oral: Sinemurian-Pliensbachian abundance and size changes in the calcareous nannofossil Schizosphaerella relation to climatic and palaeoenvironmental change in the Paris Basin By: Thibault, N.
- 15.15 Oral: Sedimentology, stratigraphy and palaeoenvironments of the Miocene primate-bearing sequence in Inner Mongolia, China By: Kaakinen, A.
- 15.30 Oral: Stable nickel isotopes measured in situ from fossilized microorganisms By: Neubeck, A.

TOPIC 7. CLIMATE

SESSION 7.1 CLIMATE FROM THE PALAEOGENE TO THE ANTHROPOCENE - BRIDGING TIMESCALES AND APPROACHES

FRIDAY JANUARY 12TH EARLY & LATE MORNING - ROOM \$12

CONVENERS: SOFIA RIBEIRO (GEUS), KAREN DYBKJÆR (GEUS), NICOLAJ KROGH LARSEN (AARHUS UNIVERSITY), MARIT-SOLVEIG SEIDENKRANTZ (AARHUS UNIVERSITY) AND CAMILLA S. ANDRESEN (GEUS)

- 09.00. Keynote: Deglacial Holocene paleoceanography of Herald Canyon, Chukchi Sea By: Pearce, C.
- 09.30. Oral: Investigating phase-relationships between ice margin instabilities and oceanographic conditions in Baffin Bay during the last deglaciation and early Holocene By: Jackson, R.
- 09.45 Oral: A 2000-year record of ocean influence on Jakobshavn Isbræ calving activity, based on marine sediment cores By: Wangner, D.J.
- 10.00 Oral: An evaluation of IRD as a proxy for glacier change: results from Upernavik Isfjord.

By: Vermassen, F.

- 10.15 Oral: Holocene temperature trends in the Northern Hemisphere high latitudes – model-data comparisons By: Seppä, H.
- 11.00 Oral: Tracers of sea ice, primary production and meltwater inputs: distribution of biogenic proxies in a High Arctic fjord system, Northeast Greenland By: Heikkilä, M.
- 11.15 Oral: Sea ice, marine productivity, and human settlement dynamics in the North

By: Ribeiro, S.

- 11.30 Oral: Eocene bryozoan biota vs climatic events (Seymour Island, West Antarctica)By: Hara, U.
- 11.45 Oral: Miocene glacial events and their influence on lithology distribution within the Danish North Sea area By: Dybkjær, K.
- 12.00 Oral: Paleoclimate and paleoceanography data based on isotope13C and 18O measurements with the new measurement toolBy: Mandic, M.

TOPIC 8. QUATERNARY GEOLOGY

SESSION 8.1 ICE AND CLIMATE HISTORY IN THE ARCTIC AND SUBARCTIC

WEDNESDAY JANUARY 10TH WHOLE DAY - ROOM S2

CONVENERS: KURT H. KJÆR (NATURAL HISTORY MUSEUM OF DENMARK, UNIVERSITY OF COPENHAGEN), NICOLAJ K. LARSEN (AARHUS UNIVERSITY) AND ANDERS SCHOMACKER (UNIVERSITY OF TROMSØ)

- 11.00. Oral: A 200 ka glaciation history from NW Svalbard By: Alexanderson, H.
- 11.15. Oral: Advances in Deglaciation on Svalbard By: Farnsworth, W.R.
- 11.30. Oral: Molluscs show an early and exceptional warm Holocene Thermal Maximum around Svalbard, which is not found in climate models

By: Mangerud, J.

11.45 Oral: The Mineral Assemblage of Gas-charged sediments from Vestnesa Ridge, NW Svalbard – a tale of crystallization and dissolution

By: Vogt, C.

- 12.00 Oral: Local ice caps response to Holocene climate variability in Kobbefjord, West Greenland By: Larsen, N.K.
- 12.15 Oral: Relative sea-level data as a constraint of Holocene ice sheet history in Finderup Land, NE Greenland By: Strunk, A.
- 12.30 Oral: Reindeer kill dates record late Holocene glacier lake outburst floods in East Greenland By: Bjørk, A.
- 12.45 Oral: Younger Dryas ice margin retreat triggered by warming of the ocean surface in central-eastern Baffin Bay By: Oksman, M.
- 14.00 Oral: Constraining the evolution of the last Eurasian ice sheets: progress towards DATED-2 By: Hughes, A.
- 14.15 Oral: Marine environmental changes in front of the Scandinavian Ice Sheet during the last deglaciation By: Krupinski, N.Q.
- 14.30 Oral: Deglaciation history of western Norway inferred from 10Bedating of erratics and 14C-dates from sediment cores By: Svendsen, J.I.
- 14.45 Oral: Deglaciation patterns of the Lake District Ice Lobe of the Scandinavian Ice Sheet in SE Finland during the Younger Dryas By: Lunkka, J.

15.00 Oral: 10Be and 26Al exposure and burial histories for ancient granite tors in arctic Finland.

By: Hall, A.

15.15 Oral: New insights into the glacial and climate history of the Polar Urals, Arctic Russia

By: Regnéll, C.

16.00 Oral: Preliminary results based on 24 new 36Cl exposure datings reveals asynchronous deglacial history of Tröllaskagi peninsula, central north Iceland

By: Brynjólfsson, S.

16.15 Oral: Local or distant centre of uplift, a case study from Northwest Iceland

By: Norðdahl, H.

SESSION 8.2 GLACIAL PROCESSES, DEPOSITS AND LANDFORMS

THURSDAY JANUARY 11TH LATE MORNING AND AFTERNOON – ROOM \$4

CONVENERS: JAN A. PIOTROWSKI (AARHUS UNIVERSITY), MARK JOHNSON (UNIVERSITY OF GOTHENBURG), PER MÖLLER (LUND UNIVERSITY), STIG SCHACK-PEDERSEN (GEUS), FLEMMING JØRGENSEN (GEUS), LARS OLE BOLDREEL (UNIVERSITY OF COPENHAGEN)

12.30 Keynote: Diagnosing ice sheet grounding line stability from landform morphology

By: Greenwood, S.

- 12.45 Oral: Details in glacial terrains detected from Digital Terrain Models brings new light upon the Danish glacial landscape By: Houmark-Nielsen, M.
- 14.00 Oral: Subglacial till deformation: lessons from laboratory experiments By: Piotrowski, J.A.
- 14.15 Oral: Glacial landform evolution in transitional cold warm bed subglacial conditions in the central part of Scandinavian Ice Sheet, in northern Finland

By: Sarala, P.

- 14.30 Oral: Geomorphology and distribution of subglacial triangular hummocks (murtoos) in Sweden and Finland By: Johnson, M.D.
- 14.45 Oral: Palaeo-ice streams in NE-Iceland: a new project and the first findings

By: Benediktsson, Í.

- 15.00 Oral: The framework of glaciotectonic complexes and their position in the glaciodynamic sequence stratigraphy By: Pedersen, S.S.
- 15.15 Oral: Mapping of glaciotectonic structures and associated sedimentary deposition with ground penetrating radar By: Jakobsen, P.R.

- 16.00 Oral: Computer supported 3D modelling of the Hanklit glaciotectonic complex, Mors, Denmark By: Galdal, E.
- 16.15 Oral: Glaciotectonic analysis of the geology in the NE part of Sjælland, Denmark, based on interpretation of vibro seismic data along the west bank of Esrum Sø By: Winsløw, L.
- 16.30 Oral: Interpretation of glaciotectonic complexes from analysis of thin-skinned thrust-fault structures in seismic sections, an example from the Jammerbugt in eastern North Sea. By: Boldreel, L.O.
- 16.45 Oral: Active retreat of a Late Weichselian marine-terminating glacier revealed by large-scale glaciotectonics in Melasveit, western Iceland
 - By: Sigfúsdóttir, T.

SESSION 8.3 OPEN SESSION QUARTERNARY GEOLOGY

THURSDAY JANUARY 11TH EARLY & LATE MORNING - ROOM \$4

CONVENERS: NICOLAJ K. LARSEN (AARHUS UNIVERSITY), ANNE SOFIE SØNDERGAARD /AARHUS UNIVERSITY), ASTRID STRUNK (AARHUS UNIVERSITY)

08.30 Oral: A large young impact crater beneath the Ice in Northwest Greenland

By: Kjær, K.H.

08.45 Oral: A bag of sand from the ice-concealed, 31 km large Hiawatha crater in North-West Greenland: samples of the impact plume, ejecta blanket and crater floor from a recent meteorite impact through the Greenland ice sheet

By: Garde A.A.

09.00 Oral: An interglacial deposit from Copenhagen, Denmark: marine isotope stage 7

By: Bennike, O.

- 09.15 Oral: The Quaternary of the island of Falster, SW Denmark By: Jakobsen, P.R.
- 09.30 Oral: Repeated fluvial sedimentation during the late Pleistocene in Kitinen valley, Sodankylä

By: Åberg, A.K.

09.45 Oral: Sandy deposits from a Preboreal glacier lake outburst flood (Nedre Glomsjø), southeastern Norway

By: Hansen, L.

- 12.00 Oral: Provenance and 10Be surface exposure age of Late Weichselian glacial erratic boulders in southern Norway By: Linge, H.
- 12.15 Oral: The Last Glacial and Holocene Seismostratigraphy and sedimentation history of the Lake Bolshoye Schuchye, Polar Ural, Arctic Russia

By: Haflidason, H.

TOPIC 9. ECONOMIC GEOLOGY

SESSION 9.1 CIRCULAR ECONOMY

FRIDAY JANUARY 12TH LATE MORNING SESSION - ROOM \$10

CONVENERS: PER KALVIG (MIMA, GEUS), KAREN HANGHØJ (EIT RAWMATERIALS)

- 11.45 Oral: Characterization of Raw Materials and Recycled Stone Wool Waste for Production of Stone Wool Melt By: Schultz-Falk, V.
- 12.00 Oral: Turning anthropogenic stocks into economic viable 'ore' reserves – major By: Kalvig, P.

SESSION 9.2 MINERAL RESOURCES AND DEEP-SEA MINING IN INTERNATIONAL AND NATIONAL SEABED AREAS

FRIDAY JANUARY 12TH LATE MORNING SESSION - ROOM \$10

CONVENERS: MARTIN HEINESEN (JARDFEINGI, FÆRØERNES GEOLOGISK UNDERSØGELSE), HARALD BREKKE (OLJEDIREKTORATET) OG FI<u>NN MØ</u>RK (GEUS)

12.15 Keynote: Exploration of seafloor massive sulfides: current status and perspectives.

By: Cherkashov, G.

12.45: Oral: Uncertainties in grade, tonnage, and distribution estimates for seafloor massive sulfide deposits

By: Jamieson, J.W

14.45 Oral: Preliminary characterisation of potential seafloor massive sulphide ore from the Loki's Castle deposit, on the Arctic Mid-Ocean Ridge.

By: Snook, B.

15.00 Oral: Sulfide mineralogy of the Loki's Castle hydrothermal vent, Arctic Mid-Ocean Ridge

By: Drivenes, K.

- 15.15 Oral: Deep sea mineral resources in the international seabed area By: Madureira, P.
- 15.30 Oral: Deep-sea mineral resources within National Jurisdiction By: Brekke, H.
- 15.45 Oral: Characteriseing mineral replacements reactions in Cu-Fe-Zn-S minerals from the Arctic Mid-ocean ridge using SEM, EBSD and optical microscopy

By: Sørensen, B.E.

16.00 Oral: The Seven Sisters Hydrothermal System on the Arctic Mid-Ocean Ridge

By: Marques, A.

SESSION 9.3 OPEN SESSION: ECONOMIC GEOLOGY

FRIDAY JANUARY 12TH EARLY & LATE MORNING SESSION - ROOM \$10

CONVENERS: THOMAS ULRICH (AARHUS UNIVERSITET), DIOGO ROSA (GEUS)

- 09.00. Oral: Non-invasive and non-destructive quantification of wollastonite in limestones using Raman spectroscopy By: Laakso, K.
- 09.15. Oral: Towards Real-Time Ore Grade Evaluation using Laser-Induced Breakdown Spectroscopy By: Kangas, L.
- 09.30. Oral: Zn-Pb-Cu sulfide-bearing glacial sandstone erratics near Raahe on the western coast of Finland as indicators of Paleozoic base metal mineralization at the bottom of the Bothnian Bay By: Nilsson, E.
- 09.45 Oral: Paragenetic evolution of hydrothermal REE mineralisation in the Olserum-Djupedal area, SE Sweden By: Andersson, S.S.
- 10.00 Oral: Critical metal mineralisation in Sweden: overview and highlights By: Jonsson, E.
- 10.15 Oral: Cu-Mo mineralization epochs in NW Iran and their temporal relationship with metallogenic zones of neighboring Lesser Caucasus and Central Iran By: Simmonds, V.
- 11.00 Oral: 2D elemental mapping of pyrite by LA-ICP-MS: an application in visualizing Au enrichment processBy: Zhou, L.
- 11.15 Oral: Beyond Classification Managing Resources Sustainably By: Heiberg, S.
- 11.30 Oral: Non-invasive and non-destructive quantification of wollastonite in limestones using Raman spectroscopy By: Leveinen, J.

TOPIC 10. ENGINEERING AND ENVIROMENTAL GEOLOGY

SESSION 10.1 GEOHAZARDS IN THE NORDIC AND ARCTIC REGIONS

THURSDAY JANUARY 11TH WHOLE DAY - ROOM MEETING ROOM 2

CONVENERS: ÞORSTEINN SÆMUNDSSON (UNIVERSITY OF ICELAND), REGINALD HERMANNS (NTNU)

- 08.30 Keynote: Artificially triggering of Rock Fall in Norway. By: Domaas, U.
- 08.45 Keynote: Artificial trigger of the large-scale Chapf rock instability by two blastings in 2001/2002, Bernese Oberland, Switzerland By: Gruner, U.
- 09.00 Keynote: Artificially supply of water for release of the Veslemannen instability at Mannen in Romsdalen, western Norway By: Blikra, L.H.
- 09.15 Keynote: Geological observations of the landslide of June 17, 2017 in Karrat Fjord (central West greenland)

By: Guarnieri, P.

- 09.30 Oral: Permafrost rock walls in norway Thermal regime and geomorphological processes in time and space By: Etzelmüller, B.
- 09.45 Oral: The triggering factors of the Móafellshyrna debris slide in northern Iceland: intense precipitation, earthquake activity and thawing of mountain permafrost By: Sæmundsson, Þ.
- 12.00 Oral: Geomorphologic Evidence and Timeline Reconstruction of Holocene Jökulhlaups along the Hvítá River and Gullfoss, Iceland By: Wells, G.
- 12.15 Oral: An automatic watch of a slope, Lac à l'Eau-Claire, Nunavik By: Decaulne, A.
- 12.30 Oral: Integrated analysis of past, and potential future rock slope failures of various size from Rombakstøtta, Norway By: Morken, O.A.
- 12.45 Oral: Cosmogenic nuclide dating of rock-slope failure deposits and rock slope deformation in Troms county, northern Norway By: Hermanns, R.L.
- 14.00 Oral: Seismological observations of Landslide and Tsunami in Karrat Fjord, Greenland, June 17 2017 By: Dahl-Jensen, T.
- 14.15 Oral: Sensitivity to coastal erosion in southern Sweden shown in a map viewer

By: Malmberg, K.

14.30 Oral: Destabilisation and temporal deformation patterns of rockslope instabilities in Northern and Western Norway By: Hilger, P. 14.45 Oral: Monitoring active rock fall and avalanche events By: Kristensen, L.

15.00 Oral: Continuosly monitoring of Gámanjunni 3, 26 Mm3 unstable rockslide, Kåfjord, northern Norway

By: Majala, G.D.

15.15 PANEL DISCUSSION

SESSION 10.2 OPEN SESSION ENGINEERING AND ENVIROMENTAL GEOLOGY

WEDNESDAY JANUARY 10TH WHOLE DAY - ROOM \$10

CONVENERS: JOAKIM KORSHØJ (GEO)

- 11.00. Oral: Geochemistry of depodited mine tailings in Repparfjorden, northern Norway, and their effect on bottom fauna By: Andersson, M.
- 11.15. Oral: Developing of Geothermal District Heating solutions for 4 towns in Poland

By: Midttømme, K.

- 11.30. Oral: Risks of arsenic exposure through agriculture By: Loukola-Ruskeeniemi, K.
- 11.45 Oral: Weakness Zones in the Bedrock Geophysical Studies in City Area

By: Huotari, T.

12.15 Oral: Geological studies of the possible Helsinki–Tallinn undersea tunnel route

By: Nenonen, K.

- 12.30 Oral: 2,5D Open Source Modeling of Rock Aggregate Resources in the Helsinki Metropolitan Area By: Mäkelä, S.
- 12.45 Oral: Digital archive for strong ground motions recorded in earthquake sequences

By: Boserup, V.A.

14.00 Oral: Development of a direct tensile test method for microtextural fracture studies

By: Appelquist, K.

14.15 Oral: The quaternary history at the Horns Rev 3 site

By: Korshøj, J.S.

14.30 Oral: The modelling of ice-marginal complexes and salt structures using 3D layer models

By: Andersen, T.B.

- 14.45 Oral: Get online access to historical archive with 300.000 Well logs By: Toft, M.W.
- 15.00 Oral: Construction geological map of Stockholm- and example of geo-data recycling. By: Curtis, P.

TOPIC 11. HYDROGEOLOGY

SESSION 11.1 GROUNDWATER TRANSPORT IN COLD, CHANGING CLIMATES: THEORY, EXPERIMENTS, MODELS

WEDNESDAY JANUARY 10TH LATE MORNING - ROOM MEETING ROOM 2

CONVENERS: DANIELE PEDRETTI, (GEOLOGICAL SURVEY OF FINLAND, GTK) AND HELEN FRENCH (NORWEGIAN UNIVERSITY OF LIFE SCIENCES)

- 11.00. Oral: Modelling snowmelt infiltration in a seasonally-frozen soil monitored by electrical resistivity measurements By: French, H.K.
- 11.15. Oral: Groundwater levels real time monitoring and visualization software demonstrated for Precambrian valley sediment aquifers in Ostrobothnia, W Finland By: Putkinen, N.
- 11.30. Oral: Numerical simulations of temperature-dependent transport in

waste rock piles in permafrost-dominated environments By: Pedretti, D.

SESSION 11.2 GROUNDWATER – SURFACE WATER INTERACTION; CHEMICAL AND QUANTITATIVE IMPACTS ON RIVERS, LAKES, WETLANDS, FJORDS AND COASTAL AREAS.

WEDNESDAY JANUARY 10TH LATE MORNING - ROOM MEETING ROOM 2

CONVENERS: BERTEL NILSSON (GEUS) & SØREN JESSEN (UNIVERSITY OF COPENHAGEN)

- 11.45 Oral: Geo-hydro-ecological factors affecting the distribution of endangered species of Viiankiaapa mire, in ore prospecting site By: Korkka-Niemi, K.
- 12.00 Oral: Trophic state control of groundwater-fed ecosystems by groundwater-borne phosphorus By: Nisbeth, C.S.
- 12.15 Oral: Using land-based and waterborne hydrogeophysical methods to infer geological controls on groundwater discharge to a lake By: Sebok, E.
- 12.30 Oral: Use of Water Stable Isotopes and End Member Mixing Analysis to Map and Quantify Groundwater Exchange with Lakes By: Engesgaard, P.
- 12.45 Oral: Mapping surface flow in low-gradient areas with thermal remote sensing By: Prinds, C.

THURSDAY JANUARY 11TH LATE MORNING - ROOM \$10

CONVENERS: JACOB KIDMOSE (GEUS), BERTEL NILSSON (GEUS), CARLOS DUQUE (AARHUS UNIVERSITY), TORBEN SONNENBORG (GEUS)

08.30 Keynote: Lacustrine groundwater discharge and its relevance for eutrophication

By: Lewandowski, J.

09.00 Oral: Developing methods to assess quantitative and chemical contact between groundwater and the various surface water bodies in relation to update of river basin management plans in Denmark

By: Nilsson, B.

- 09.15 Oral: Using the stable oxygen isotope of phosphate as a tracer for various phosphorus sources to Lake Nørresø, Denmark. By: Nisbeth, C.S.
- 09.30 Oral: Transport and transformation of nitrate in a riparian wetland By: Petersen, R.J.
- 09.45 Oral: An integrated and coupled surface/subsurface water model to estimate lake hydrologic and biogeochemical budgets over Northern lake-rich regions

By: Hanson, Z.

- 12.00 Oral: Investigating groundwater contribution to lakes in clay dominated catchments By: Kidmose, J.
- 12.15 Oral: Groundwater discharge and recharge patterns in complex aquifer system in a mine exploration area in Northern Finland By: Åberg, S.C.
- 12.30 Oral: Coastal groundwater in Western Sweden: Hydrogeological and societal challenges By: Barthel, R.
- 12.45 Oral: "Translating" a density-independent groundwater model into a SEAWAT model

By: Ljungberg, T.

13.00 Oral: Spatial variability of water and nutrient fluxes in groundwater discharging to Ringkøbing Fjord By: Duque, C.

SESSION 11.3 INTEGRATED HYDROLOGICAL MODELING

WEDNESDAY JANUARY 10TH EARLY AFTERNOON - ROOM MEETING ROOM 2

CONVENERS: MORTEN DAHL LARSEN (TECHNICAL UNIVERSITY OF DENMARK) AND PETER ENGESGAARD (UNIVERSITY OF COPENHAGEN)

14.00 Oral: A watershed scale approach to model iron concentration in river

By: Saari, M.

- 14.15 Oral: Assessing the impact of model structure on uncertainty in integrated hydrological modelling By: Butts, M.
- 14.30 Oral: Can new drain concepts improve local drain flow performance in catchment scale modelling (MIKE SHE)? By: Karlsson, I.B.
- 14.45 Oral: Integrated hydrology in the COHERENT project By: Larsen, M.A.D.

SESSION 11.4 OPEN SESSION HYDROGEOLOGY

WEDNESDAY JANUARY 10TH EARLY AFTERNOON – ROOM MEETING ROOM 2

CONVENERS: PETER ENGESGAARD (UNIVERSITY OF COPENHAGEN)

- 15.00 Oral: Skåningshave a new major well-field on the island of Lolland (S.Denmark). Development and hydrogeology By: Bitsch, K.
- 15.15 Oral: Investigating controls on groundwater drought hazard in Scandinavia

By: Haaf, E.

TOPIC 12. GEOPHYSICS

SESSION 12.1 OPEN SESSION IN GEOPHYSICS

FRIDAY JANUARY 12TH LATE MORNING AND EARLY AFTERNOON – ROOM MEETING ROOM 2

CONVENERS: CHRISTIAN SCHIFFER (DURHAM U.), VALERIE MAUPIN (U. OF OSLO), STÉPHANE RONDENAY (U. OF BERGEN), SOFIE GRADMANN (GEOLOGICAL SURVEY OF NORWAY)

- 11.00 Keynote: Very deep structural contrasts across the Northern Tornquist Zone By: Balling, N.
- 11.30 Oral: The 3D stress field of Nordland, northern Norway insights from numerical modelling By: Gradmann, S.
- 11.45 Oral: Towards a new global crustal model derived from rapid receiver function inversion of GLIMER data By: Schiffer, C.
- 12.00 Oral: High-resolution seismic investigations of the Caledonian Lower Allochthon and basement transition in Jämtland, Sweden By: Hedin, P.
- 12.15 Oral: Magnetic characteristica of Paleogene sediments in Jutland, Denmark.

By: Beyer, C.

- 12.30 Oral: Crustal structure across coastal Nordland (Norway) from teleseismic receiver functions By: Drottning, A.
- 12.45 Oral: 3D geomodelling workflow using high performance computing – the vuonos and keretti deposits in Outokumpu Mining area, eastern Finland By: Laine, E.
- 14.45 Oral: Late Mesoproterozoic, Sveconorwegian orogenic mantle preserved beneath SW Fennoscandia, reflected in seismic tomography and assessed by thermal modelling By: Slagstad, T.
- 15.00 Oral: Data acquisition in the North and e-infrastructure by the EPOS-Norway team By: Atakan, K.
- 15.15 Oral: Relative relocation of earthquakes along the northern North Atlantic ridge using Rayleigh waves By: Kolstad, C.G.

TOPIC 13. HIGH AND LOW TEMPERATURE GEOCHEMISTRY, COSMOCHEMISTRY AND GEOCHRONOLOGY

SESSION 13.1 GEOMICROBIOLOGY OF THE PAST AND PRESENT

THURSDAY JANUARY 11TH LATE MORNING AND EARLY AFTERNOON - ROOM S2

CONVENERS: KARINA K. SAND (NANO-SCIENCE CENTER, UNIVERSITY OF COPENHAGEN), DOMINIQUE TOBLER (NANO-SCIENCE CENTER, UNIVERSITY OF COPENHAGEN), EMILY CATHERINE POPE (NATURAL HISTORY MUSEUM, UNIVERSITY OF COPENHAGEN)

12.00 Keynote: Primordial cellular oxygen sensing key to animal evolution in the oxic realm

By: Hammarlund, E.

- 12.30 Invite: Microbial element cycling and transport: from ancient sedimentary basins to the Plastisphere By: Posth, N.R.
- 12.45 Oral: Pore space sealing using microbially mediated calcite precipitation: a lab to field scale study By: Tobler, D.J.
- 14.00 Oral: Ocean redox conditions between the Snowballs geochemical constraints from Arena Formation, East Greenland By: Dahl, T.W.
- 14.15 Oral: Mechanistic insight into microbial formation of iron oxides: implications for development of banded iron formations and our atmosphere

By: Sand, K.K.

SESSION 13.2 BIO-MINERAL INTERACTIONS

THURSDAY JANUARY 11TH EARLY AND LATE AFTERNOON - ROOM \$2

CONVENERS: HENRIK BIRKEDAL (AARHUS UNIVERSITY) KARINA K. SAND (NANO-SCIENCE CENTER, UNIVERSITY OF COPENHAGEN)

- 14.30 Oral: Crystallization kinetics of apatite model systems By: Birkedal, H.
- 14.45 Keynote: In, on or in between: tracking the persistence of proteins in the past

By: Collins, M.

- 15.00 Oral: Biomimetic approach to material design By: Nielsen, A.R.
- 16.00 Oral: Sub-micron resolution diffraction and fluorescence tomography reveals bone microstructure By: Wittig, N.

SESSION 13.3 INORGANIC GEOCHEMISTRY

THURSDAY JANUARY 11TH LATE AFTERNOON - ROOM S2

CONVENERS: STANISALV JELAVIC (NANO-SCIENCE CENTER, UNIVERSITY OF COPENHAGEN) AND ANNE RATH NIELSEN (NANO-SCIENCE CENTER, UNIVERSITY OF COPENHAGEN)

16.15 Oral: CaCO₃ scaling: Nucleation and growth inhibition of aragonite by MgSO₄

By: Nielsen, M.R.

- 16.30 Keynote: Microscopic view of hydrogen motion in Clay minerals from neutron scattering By: Bardallo, H.
- 17.00 Oral: Turbostratic disorder: Lessons learned from Fe-bearing Layered Double Hydroxides.

By: Dideriksen, K.

TOPIC 14. HYDROCARBON GEOLOGY AND ENERGY

SESSION 14.1 GEOTHERMAL ENERGY AND CO₂ STORAGE

THURSDAY JANUARY 11TH EARLY MORNING- ROOM MEETING ROOM 1

CONVENERS: NIELS E. POULSEN (GEUS), MORTEN L. HJULER (GEUS), JESPER M. BAUNSGAARD (ROSS OFFSHORE), MORTEN LETH HJULER (GEUS), AND FLEMMING D. CHRISTENSEN (GEO)

- 08.30 Oral: Understanding nature's secrets and using the new knowledge to solve society's challenges: insights for CO₂ sequestration By: Stipp, S.L.S.
- 08.45 Oral: A numerical investigation of combined heat storage and extraction in deep geothermal reservoirs By: Major, M.
- 09.00 Oral: Shallow subsurface thermal structure for onshore Denmark By: Balling, N.
- 09.15 Oral: Assessing European geological CO₂ storage capacity By: Anthonsen, K.L.
- 09.30 Oral: Seismic interpretation of a slopping offshore potential CO₂ aquifer; the Gassum Formation in Skagerrak between Norway and Denmark

By: Gregersen, U.

TOPIC 15. MARINE GEOLOGY

SESSION 15.1 TECTONIC, GEODYNAMIC, OCEANOGRAPHIC, AND CRYOSPHERIC EVOLUTION OF THE ARCTIC OCEAN FROM MESOZOIC TO PRESENT DAY

FRIDAY JANUARY 12TH LATE MORNING AND EARLY AFTERNOON – ROOM \$4

CONVENERS: LARA PEREZ (GEUS), JOHN HOPPER (GEUS), CHRISTIAN MARCUSSEN (GEUS), AND YNGVE KRISTOFFERSEN (UNIVERSITY OF BERGEN)

12.30 Keynote: On the origin of the marginal plateaus north of Svalbard and Greenland

By: Kristoffersen, Y.

14.45 Oral: Depositional history of the western Amundsen Basin, Arctic Ocean

By: Hopper, J.R.

15.00 Oral: Late Cenozoic paleoenvironment and erosion estimates for the northeastern Svalbard/northern Barents Sea continental margin, Norwegian Arctic

By: Lasabuda,A.

- 15.15 Oral: Greenland Ice Sheet evolution and dynamics seen from the perspective of a large glacial fan system, northeast Baffin Bay By: Knutz, P.C.
- 15.30 Oral: The Opening of the Arctic-Atlantic Gateway: Tectonic, Oceanographic and Climatic Dynamics – Status of the IODP Initiative

By: Geissler, W.

- 15.45 Oral: Arctic Climate Perturbations during the Early Triassic Biotic Crisis By: Knies, J.
- 16.00 Oral: Enigmatic craters and giant gas flares in the central Barents Sea

By: Nixon, F.C.

SESSION 15.2. PALEO-LANDSCAPE ANALYSIS BASED ON HIGH-RESOLUTION MARINE DATA

FRIDAY JANUARY 12TH LATE MORNING- ROOM \$4

CONVENERS: KATRINE JUUL ANDRESEN (AARHUS UNIVERSITY), MATTHEW OWEN (GEUS), JØRN BO JENSEN (GEUS)

11.00 Oral: Geological setting of Anholt Loch (Site M0060)IODP Expedition 347

By: Jensen, J.B.

11.15 Oral: Postglacial paleo-landscape evolution of Aalborg Bay-Læsø Rende, northwestern Kattegat – results of a regional aggregate raw material mapping campaign

By: Nørgaard-Pedersen, N.

- 11.30 Oral: When did the Danish/German/Swedish straits form? By: Bennike, O.
- 11.45 Oral: Glaciotectonic thrust complex offshore Holmsland, the Danish North Sea - New Results.

By: Novak, B.

- 12.00 Oral: The impact of a buried shear margin moraine and thermokarst landscapes on ice-stream dynamics of the SW Barents Sea revealed by high-resolution 3D seismic data By: Bellwald, B.
- 12.15 Oral: EMODnet Seabed Habitat, an ambitious project for mapping benthic habitats in European waters. The Danish contribution. By: Al-Hamdani, Z.

SESSION 15.3. THE QUATERNARY GEOLOGY OF THE NORTH SEA BASIN

FRIDAY JANUARY 12TH EARLY MORNING- ROOM \$4

CONVENERS: DAG OTTESEN (NGU), PAUL KNUTZ (GEUS), JØRGEN LETH (GEUS)

09.00 Keynote: The geological history of the North Sea Basin during the Quaternary

By: Ottesen, D.

- 09.30 Oral: The Quaternary Stratigraphy in the Norwegian Sector of the Central North Sea – A Site Survey Perspective By: Bohling, B.
- 09.45 Oral: Quaternary depositional environments and glacial history of the North Sea constrained by aminostratigraphy By: Reinardy, B.
- 10.00 Oral: The Norwegian Strandflat an offshore perspective

By: Løseth, H.

10.15 Oral: The tunnel valleys of the central and northern North Sea (56°N – 62°N): Distribution, Characteristics and Generations
By: Stewart, M.

TOPIC 16. GEOMORPHOLOGY

SESSION 16.1 REMOTE SENSING - DIGITAL MAPPING, REMOTE SENSING AND 3D MODELS IN EARTH SCIENCE

WEDNESDAY JANUARY 10TH LATE MORNING-ROOM \$12

CONVENERS: ERIK VEST SØRENSEN (GEUS), SARA SALEHI (GEUS) AND BJØRN HENNING HEINCKE (GEUS)

- 11.00. Keynote: Combined visualisation of 3D outcrop and related geoscientific data using LIME By: Buckley, S.J.
- 11.30. Oral: Environmental mapping and monitoring of Iceland by remote sensing (EMMIRS)

By: Pedersen, G.B.M.

11.45 Oral: ASPECT spectral imaging CubeSat for planetary studies

By: Kohout, T.

- 12.00 Oral: A 10-year series of surface kinematics of periglacial sorted circles from SfM close-range photogrammetry By: Berthling, I.
- 12.15 Oral: The 2017 eruption of Erta 'Ale volcano, Ethiopia: a case study in monitoring remote volcanoes with satellites.

By: Barnie, T.

- 12.30 Oral: 3D modelling and visualising of resource deposits in Norway with UAV technology and 3D MOVE By: Henderson, I.
- 12.45 Oral: Crystal-scale magnetic anomalies revealed by scanning magnetic microscopy By: Church, N.

SESSION 16.2 HOLOCENE COASTAL MORPHO-SEDIMENTARY SYSTEMS: ARCHIVES, PROCESSES AND FORCING MECHANISMS

WEDNESDAY JANUARY 10TH EARLY AFTERNOON- ROOM \$12

CONVENERS: MIKKEL FRUERGAARD (UNIVERSITY OF COPENHAGEN), JEROME GOSLIN (UNIVERSITY OF COPENHAGEN) AND LASSE SANDER (ALFRED WEGENER INSTITUT)

14.00 Oral: Did cuspate foreland formation trigger large-scale barrier coast retreat?

By: Fruergaard, M.

14.15 Oral: Detailed dynamic development and sedimentary architecture of a Holocene to Recent micro-tidal barrier-island, Danish Wadden Sea

By: Johannessen, P.N.

- 14.30 Oral: High-resolution Holocene windiness and storminess over the North Sea: insights from Filsø lake, Western Denmark By: Goslin, J.
- 14.45 Oral: Was the 4th largest Danish Lake (Mossø) once much larger? By: Kristiansen, S.M.
- 15.00 Oral: The occurrence and formation of wash-over deposits along the shores of the inner Danish Waters By: Kroon, A.
- 15.15 Oral: Polar gravel beach-ridge systems sedimentary architecture and use as climate archive (South Shetland Islands, Antarctica) By: Lindhorst, S.

SESSION 16.3 LIDAR IN GEOMORPHOLOGY

WEDNESDAY JANUARY 10TH LATE AFTERNOON- ROOM \$12

CONVENERS: ZYAD AL-HAMDANI (GEUS, DENMARK) AND VERNER BRANDBYGE ERNSTSEN (UNIVERSITY OF COPENHAGEN, DENMARK)

16.00. Oral: Active rock glaciers at sea level in Finnmark, Northern Norway?

By: Lilleøren, K.

16.15. Oral: Better Visualisation of Air-borne Laser Scanning for geomorphological and archaeological interpretation

By: Ljungberg, T.

16.30. Oral: Morphologic mapping and monitoring of sediment transport using high resolution topobathymetric Lidar in manifold geomorphic settings: Examples from Isar river in Munich and Wadden Sea in Denmark

By: Steinbacher, F.

16.45 Oral: Maping morphology and vegetation in shallow water using topobathymetric lidar

By: Andersen, M.S.

TOPIC 17. EDUCATION, COMMUNICATION, PRESERVATION AND GEOHERITAGE

SESSION 17.1 EDUCATION, COMMUNICATION, PRESERVATION AND GEOHERITAGE

THURSDAY JANUARY 11TH EARLY MORNING- ROOM \$2

CONVENERS: SANDRA M. BOLLWERK (GEO-mare) AND EMMA REHNSTRÖM, (GEOLOGICA CONSULT)

- 08.30 Oral: What do we actually teach students in the field? By: Malm, R.H.
- 08.45 Oral: Knowledge Exchange for Resource Management and International Trust – Aleppo case study By: Stevens, R.
- 09.00 Oral: Geology Day in Sweden, lessons from 17 years. By: Aroka, N.
- 09.15 Oral: Generalized bedrock map of Finland and related material By: Mikkola, P.
- 09.30 Oral: Challenges in conveying geology to society Examples from Danish landscapes traced by a Norwegian geologist, in order to create curiosity for geology and explain geological processes By: Kaland, T.
- 09.45 Oral: Rock Fossils on Tour Zoological nomenclature at its coolest! By: Milàn, J.

SCIENTIFIC PROGRAMME POSTER PRESENTATIONS



In the competition for the Best Student Poster Award. These are all presented on Wednesday in Poster Session from 10.00-11.00.

All other posters are to be presented on Thursday in Poster Session from 10.00-11.00.

Poster #	Session	Poster Title and Author
1	1.1. Hotspots and intraplate magmas: Mantle	'Birthing an ocean island rift: mantle fingers or lateral flow?' by Frances Deegan
2	sources, magmatic processes and	'Alkaline OIBs derived by pyroxenite-melting of low-T mantle' by Nina Søager
3	metasomatism.	'Tracing pyroxenite in the mantle source at Heard Island in the Indian Ocean' by Abigail K Barker
4		'Hydrothermal alteration of the ultramafic rocks at the Kemi intrusion' by Fabian Mauricio Botello
5		'Geochemical characteristics of an enriched Icelandic tholeiitic magma suite: the case of the Kverkfjöll volcanic system' by Eemu Ranta
6	1.3. Understanding Large Igneous Provinces and associated rapid environmental changes: from the North Atlantic Igneous Province and beyond.	'Lithological and geochemical variations during the PETM and later Eocene hyperthermals: details from a new drill core from Fur, Denmark. ' by Ella Wulfsberg Stokke
7		'Pyroxenes used as probes for assessing gas loads from LIP magmas: a crystal/melt partitioning study for sulfur and halogens' by Sara Callegaro
8		'Glendonite in an early Eocene Konservat-Lagerstätte (Fur Formation of Northern Denmark) and Palaeocene / Eocene formations on Svalbard are good climate and biosphere interpretive indicators. ' by Bo Pagh Schultz

Poster #	Session	Poster Title and Author
9	1.4. Tephra markers in the circum North Atlantic area	'Holocene tephra stratigraphy in the Vestfirðir peninsula, NW Iceland' by Esther Ruth Guðmundsdóttir
10		'Timing of early Holocene explosive eruptions in Iceland – improved tephrochronology' by Maarit Kalliokoski
11	1.6. Alkaline magmatism, carbonatites and	'Mineralogy and petrology of mafic dikes from the Siilinjärvi carbonatite complex, Finland' by Matias Carlsson
12	associated mineral resources.	'Varena suite in the crystalline crust of the Southern Lithuania: implication to the genesis and mineralization. ' by Vaida Kirkliauskaite
13		'Geochronology of the Särna alkaline complex, Dalarna, Sweden' by John A. Eliasson
14		'Polymetallic, REE and precious elements new results within Suwalki Anorthosite Massif, NE Poland' by Michał Ruszkowski
15		'New Rb-Sr and Zircon U-Pb dating of the Grønnedal-Íka igenous complex, SW Greenland' by Gabrielle Stockmann
16		'Thorium in eudialyte ore deposits from Greenland studied by synchrotron radiation (µ-XRF/-XAFS) and electron microscopic techniques (SEM, TEM) ' by Platon N. Gamaletsos
17		'Experimental simulation and predictive modelling of rare earth element enrichment in carbonatites and alkaline magmas' by Johann Tuduri
18	1.7. Magmatic Plumbing Systems.	'The Seiland igneous province: Imaging a well preserved ediacaran deep seated magmatic system by 3D gravity and magnetic modelling' by Zeudia Pastore
19		'Rock magnetic properties and magnetic carriers of a deep crustal magmatic system, the Reinfjord Ultramafic Complex, Seiland Igneous Province, Northern Norway' by Geertje W. ter Maat
20		'Fracture networks in and around igneous intrusions on Svalbard: implications for fluid flow' by Marte Festøy

Poster #	Session	Poster Title and Author
21		'A new model for saucer-shaped intrusions: shear failure versus tensile opening at sill tips' by Øystein Haug
22	1.8. Building Baltica	'A ca.1.89 Ga magmatic complex in eastern Lithuania: a link connecting with the domains in Estonia and the Bergslagen terrane in Sweden ' by Laurynas Šiliauskas
23		'Mineral shape fabric analysis of the Kynsikangas Shear Zone: Evidence for a transpressive origin? ' by Johanna Berckhan
24		'The Nisser Shear Zone – Discovery of a Sveconorwegian crustal-scale detachment zone in southern Norway' by Espen Torgersen
25		'AMCG Mazury Complex in NE Poland – a time frame of the suite formation' by Janina Wiszniewska
26		'Provenance of Paleoproterozoic clastic metasedimentary rocks in Norrbotten, northern Sweden' by Anna Ladenberger
27		'Petrogenesis of c. 1.9 Ga meta-volcanosedimentary rocks in the Nautanen- Aitik area, northern Sweden: Geological, lithogeochemical and Sm-Nd isotopic constraints. ' by Edward P. Lynch
28		'Deformation history of the Archipelago of Southern Finland ' by Kaisa Nikkilä
29		'A link between Mesoproterozoic basement of Lithuania and NE Poland by inherited metamorphic zircon data' by Janina Wiszniewska
30	1.9. Micro-beam frontiers in magmatic, metamorphic,	'In situ Rb-Sr dating of snowball Earth tillite clasts for provenance study on the Chuos formation, Namibia. ' by Martin Thor
31	and hydrothermal systems	'New Scanning Electron Microscope for automated mineralogical, crystallographic and chemical analyses' by Nynke Keulen
32	1.10. Geochemistry and modeling of Igneous Systems.	'Chronology and geochemical and structural evolution of dykes intruding the Reinfjord ultramafic to mafic intrusion in the Seiland Igneous Province' by Alf Andre Orvik

Poster #	Session	Poster Title and Author
33	1.10 continued	'Platinum Group Minerals in the Reinfjord Ultramafic Complex' by Even Sunnanå Nikolaisen
34	1.11. Open session on petrology and	'Oxidative weathering in the Late Neoproterozoic: Preliminary Cr Isotope results from the Urucum District, Brazil' by Trygvi Bech Árting
35	geochemistry	'Recycling of continental material through the suprasubduction zone Mawat ophiolite, NE Iraq' by Heider Al Humadi
36		'Quadlab – A 40Ar/39Ar and noble gas isotope laboratory at the Natural History Museum of Denmark' by Michael Storey
37	2.1. Geodynamic and geological evolution of the	'A large Devonian ultra-high-pressure province in northeastern Greenland' by Thorsten Nagel
38	Arctic	'New heat flow measurements from central Arctic Ocean' by Grace Shephard
39		'Soapstone from Nuuk: fingerprinting the origin and geological history of soapstone (steatite) suitable for carving in the Godthåbsfjord-Ameralik region (southern West-Greenland). ' by Nynke Keulen
40		'Details on the Cretaceous ocean formation in the High Arctic based on satellite gravity data' by Arne Døssing
41	2.2. Deformation and metamorphism of rocks: Microstructures, processes, and physical properties	'Late magmatic-hydrothermal alteration and deformation of ultramafic rocks and dikes from the Reinfjord Ultramafic Complex' by Frederik Valentin Reinhard
42	3.1. Sedimentology	'Topographic Development as a result of regional incision, faulting, and deposition at the onset of relative sea-level rise; The upper Entrada Sandstone and the lower Curtis 'Formation, Utah, USA. ' by Sigrid Østmo da Costa

Poster #	Session	Poster Title and Author
43	3.1 continued	'Early mid-Devonian volcanism dates initiation of the Orcadian basin in the Orkney Islands, Scotland' by Lars Eivind Augland
44		'Recognizing sandstone diagenesis from outcrop to microscopic scale' by Rikke Weibel
45	3.3. Composition of siliciclastic rocks	'Impact of electrostatic forces on sediment porosity ' by Leonardo Teixeira Pinto Meireles
46	4.1. Trans-Atlantic correlation of Proterozoic collisional belts and Paleoproterozoic Metallogeny of the Arctic	'New U-Pb geochronology for the Archean basement, Karrat Group cover sequence and later intrusions of the Ray Province, West Greenland. ' by Kristine Thrane
47	4.2. Caledonian orogenic cycle: the Greenland-	'Detrital zircon signatures of the metasedimentary rocks of the Lower Seve Nappe in the COSC-1 drillhole, Åre, Sweden. ' by Yuan Li
48	Svalbard-Scandinavia connection	'The age of metagabbro from the Bangenhuk unit, Atomfjella Complex, Ny- Friesland, Svalbard' by Jakub BAZARNIK
49	4.3. Evolution of the North Atlantic margin: from	'Pliocene Pockmarks in the eastern Danish Central Graben, North Sea - Formation and Significance' by Kaziwa Mohammadi
50	Mesozoic rifting to Cenozoic inversion	'Origin and sediment budget of an early Neogene - early Quaternary contourite drift system on the SW Barents Sea margin' by Tom Arne Rydningen
51	4.5. Open Session: Structural Geology and	'Modelling the fracture characteristics of crystalline bedrock for the purposes of bedrock surface interpolations' by Eemi Ruuska
52	Tectonic	'3D model of the lithotectonic units and regional deformation zones in the bedrock of Sweden' by Phil Curtis
53		'East Greenland 72-74° N Inland to Coast Thermo-tectonic Evolution ' by Peter Klint Jensen
54		'Mechanical separation of crust from slabs subducted below the transition zone' by Anders Vesterholt

Poster #	Session	Poster Title and Author
55	5.1. Mineralogy and its applications	'Prediction of swelling potential using the Atterberg limits' by Aikaterini Biotaki
56		'A new single-crystal XRD for mineral sciences in Scandinavia' by Henrik Friis
57	6.1. Paleozoic and Mesozoic stratigraphy,	'The Silurian Lau event – testing plant weathering as driver for ocean anoxia and animal extinction' by Julius Havsteen
58	paleoceanography and paleoclimate	'Orbital forcing of organic matter quality and quantity in a source-rock formation: the case of the Vaca Muerta Formation, Tithonian-Valanginian, Neuquén Basin, Argentina' by Johannes Monkenbusch
59		'Chemostratigraphy across the Toarcian Oceanic Anoxic Event in the Aubach section of SW Germany' by Iben W. Hougaard
60		'The giant Lower Triassic sponge-microbial build-ups from Neotethys' by Sylvain Richoz
61		'Seawater temperature change across the Pliensbachian–Toarcian transition – new isotope data from the Aubach section in SW Germany' by Christoph Korte
62	6.2. Open session in Palaeontology,	'Biostratigraphy and palaeoecology of calcareous nannofossils in the Lower Cretaceous Munk Marl Bed, Danish North Sea' by Sarah D. Møller
63	palaeoecology and paleoenvironments	'The microstructure of Euselachian (Chondrichthyes) tooth and scales from Late Permian of Lithuania-Latvia Region' by Darja Dankina-Beyer
64		'Surface analyses of fossil leaves' by Magnus A. R. Harding
65		'Late Toarcian to Early Bajocian climate and environmental changes in Europe and East Greenland – geochemical records from calcite fossils and sediments' by Jesper Allan Frederiksen
66		'Palynological investigation of the late Pliocene to early Pleistocene proto- Gulf of Corinth, Greece' by Gauti Trygvason Eliassen
67		'Middle Jurassic palaeoenvironmental events in Europe - evidence from palynology and carbon and oxygen isotopes' by Suzanne Pultz

Poster #	Session	Poster Title and Author
68	6.2 continued	'Carinodens – a new addition to the Late Cretaceous mosasaur fauna of Denmark' by Jesper Milàn
69	7.1. Climate from the Palaeogene to the	'Holocene oceanographic variability in coastal southeast Greenland' by Laurence M. Dyke
70	Anthropocene - bridging timescales and	'Late Holocene paleoclimatic and palaeoceanographic development of the eastern Baffin Bay area ' by Katrine Elnegaard Hansen
71	approaches	'Spatiotemporal differences in varve structure and preservation over the last 200 years in Lake Lehmilampi, Eastern Finland' by Sarianna Salminen
72	8.1. Ice and climate history in the Arctic and subarctic	'The Weichselian chronostratigraphical framework of the Kongsfjorden Trough Mouth Fan, W-Spitsbergen' by Daniel Hesjedal Wiberg
73		'Paleoceanographic ocean surface conditions in Kongsfjorden, Svalbard over the last 400 years' by Tiia Luostarinen
74		'Sea-ice in the Iceland-Norwegian Sea during the last 50-60000 years: first results from the IS-4C marine core' by Erna Ósk Arnardóttir
75		'A new relative sea level curve from Mestersvig, NE Greenland based on isolation basins' by Frank Bauer
76		'From fjord to land – Holocene climate of the Femmilsjøen area, NE Spitsbergen' by Lis Allaart
77		'Facies model for a rebound cycle based on mid-late Quaternary sediments in the Kongsfjorden area, NW Svalbard' by Mona Henriksen
78		'Putorana ice sheet advance over southern Taimyr, NW Siberia, during the Late Saalian (MIS 6) ' by Ivar Benediktsson
79		'Characteristics of wave-built sedimentary archives in Buor Khaya Bay (71°N/130°E), Siberian Arctic, Russia. ' by Lasse Sander
80		'Evolution of Greenland's glaciers and ice caps in the 20th century' by Niels J. Korsgaard
81		'Ice marginal fluctuations of local ice caps in McCormick Fjord, NW Greenland' by Anne Sofie Søndergaard

Poster #	Session	Poster Title and Author
82	8.2. Glacial processes, deposits and landforms	'Using large-scale patterns and morphology of subglacial meltwater corridors to gain insight into the spatial organisation, formation and evolution of meltwater drainage beneath ice sheets' by Emma Lewington
83		'Subglacial or Pro-glacial Deformed Middle-Late Weichselian Ridges in Jyderup Skov, Odsherred, Denmark' by Cecilie Skovsø Andersen
84		'Sedimentological and morphological implications for the understanding of murtoo formation in Sweden' by Gustaf Peterson
85		'Sedimentology of the new subglacial landforms detected from LiDAR data in SW Finland' by Joni Mäkinen
86		'New subglacial landforms detected from LiDAR data' by Kari Kajuutti
87		'A new glacial deposits and features database of Finland' by Niko Putkinen
88	8.3. Open session Quarternary geology	'Weichselian Stratigraphy and Deglacial Deposits from Kuusivaara, Sodankylä, Central Finnish Lapland' by Markus T.O. Valkama
89		'Lateglacial – early Holocene geomorphology between Lake Vänern and Lake Vättern, southern Sweden' by Christian Öhrling
90		'Mineralogical analysis of till by the Greenland Ice Sheet, Kangerlussuaq, West Greenland' by Karin Grodzinsky
91		'Late Glacial and Holocene development within the source depression of the Vejrhøj end-moraine, NW Sjælland, Denmark' by Peter Roll Jakobsen
92		'Lake sediment analysis of the Nedre Glomsjø outburst flood event, Southeastern Norway' by Helle Daling Nannestad
93		'Sedimentary characteristics of a possible tsunami deposit in the Leirfjorden area, North Norway' by Louise Hansen
94	9.1. Circular economy	'Utilization of biochar as a cover material in mine waste areas' by Pertti Sarala

Poster #	Session	Poster Title and Author
95	9.3. Open Session: Economic Geology	'REE-enrichment in Palaeoproterozoic banded iron formations, Bergslagen, Sweden: primary precipitation or hydrothermal overprint? ' by Marcus Brismo-Ploetz
96		'Platinum Group Element Mineralization of the RF-4 drill core, Reinfjord Ultramafic Complex, Troms, Norway' by Lars Tollefsrud
97		'Crustal structure and hosting lithology account for the spatial distribution of gold mineralisation in SW Finland' by Jaakko Kara
98		'Characterisation of the Kivilompolo Molybdenum Mineralisation, Peräpohja Belt, Northern Finland' by Matthew Goode
99		'Accessory minerals within the SAM – a preliminary case study' by Michal Ruszkowski
100		'Au-Ag-(Bi-Te-Se)-enriched polymetallic vein mineralisations in SW Sweden: ore mineralogy and thermal evolution' by Erik Jonsson
101	10.1. Geohazards in the Nordic and Arctic regions	'Assessment of risk posed by slope failures at a coastal cliff in Hyllestad municipality (Sogn og Fjordane, Norway) ' by Vegard Nes
102		'The Kassen and Håkåneset rock slope instabilities along fjord lakes in Telemark show large postglacial gravitational strain but no present day deformation, Southern NorwayThe Kassen and Håkåneset rock slope instabilities along fjord lakes in Telemark show large postglacial gravitational strain but no present day deformation, Southern Norway' by Kaja Krogh
103		'Stability Analysis of Preikestolen (Rogaland county, Norway) ' by Katrine Mo
104		'A structural and InSAR study of the unstable rock slope in Oksfjellet, Troms' by Marie Bredal
105		'Monitoring of surface processes in Gråfonnfjellet, Rauma municipality, Norway' by Pierrick Nicolet

Poster #	Session	Poster Title and Author
106	10.2. Open session Engineering and	'Provenance and Contamination History of the Paraná Delta, Argentina' by Jane Ihrfors
107	environmental geology	'Investigations of clay deposits as barrier for a final repository for Denmark's low- and intermediate level radioactive waste in subsurface to 500 m depth. ' by Bertel Nilsson
108		'Development of a database for stratigraphic information on Quaternary deposits at the Geological Survey of Norway (NGU) ' by Louise Hansen
109	11.1. Groundwater transport in cold, changing climates: theory, experiments, models	'Subpermafrost Groundwater and Pingos in Adventdalen - Evaluating the Implication of Holocene Permafrost Formation in Near Coastal Areas -' by Mikkel Toft Hornum
110	11.2. Groundwater – surface water interaction;	'An evaluation of tools to standardise groundwater resource assessment for coastal areas in Sweden' by Ingmar Geuze
111	chemical and quantitative impacts on rivers, lakes,	'Potential for Lake Bank Filtration at Lake Tissoe, Denmark' by Franciska Amalie Køhn
112	wetlands, fjords and coastal areas.	'Formation of saltwater intrusions in the low-lying coastal areas during the Holocene in Southern Jutland' by Rena Meyer
113		'Temperature profiles to measure groundwater discharge to Ringkøbing Fjord. ' by Joel Tirado-Conde
114	11.3. Integrated Hydrological Modeling	'Estimated variation in pesticide leaching through greens and fairways based on detailed fate-descriptions in 12-cm soil profiles' by Sachin Karan
115	11.4. Open session Hydrogeology	'Sustainable Water Resources in Iranian Qanats' by Fataneh Hajatpour Birgani
116		'Fracture minerals investigations at Kyläniemi, Southern Finland: Paleohydrogeological implications' by Minja Seitsamo-Ryynänen
117		'Stable water isotopes in snow: Changes throughout the season in Finse, Norway' by Evelien van Dijk

Poster #	Session	Poster Title and Author
118	12.1. Open session in Geophysics	'Geological characterization of clayey till using cross-borehole ground penetrating radar. ' by Espen Bing Svendsen
119		'Geophysical modelling of the Leka Ophiolite Complex' by Alexander Michels
120		'Towards a Finnish Seismic Database – Taming the National Seismological DDSS' by Tommi Vuorinen
121		'The seismic signature of the Mantle Transition Zone in different geodynamic scenarios' by Christian Schiffer
122		'Why the mantle transition zone does not appear to be thinned at plume sites' by Thorsten Nagel
123	13.2. Bio-mineral interactions	'Quantification of molecular bonding: Implications for origin of life and the iron cycle' by Stanislav Jelavić
124		'Manganese speciation and distribution in foraminiferal calcite under varying environmental conditions' by Nadine Quintana Krupinski
125		'Using LA-ICPMS to investigate seasonality in Cod otolith microchemistry' by Kristian Nielsen
126	14.1. Geothermal energy and CO2 storage	'Mass estimation of CO2 trapping in the Smeaheia reservoir' by Tatiana Sacco
127		'Regional evaluation of structural collapse in sandstone reservoirs and impact on reservoir quality, a case study from the Entrada Sandstone, Utah, USA' by Nikoline Bromander
128		'Geological constraints on the immobilization potential for CO2 in the Upper Triassic – Lower Jurassic Gassum Formation (Skagerrak, Norway) ' by Anja Sundal

Poster #	Session	Poster Title and Author
129	15.1. Tectonic, geodynamic, oceanographic, and	'The general seafloor morphology of the NE Greenland shelf - Insights from new marine shallow seismic and core data collected during the NorthGreen2017 expedition' by Lasse Nygaard Eriksen
130	the Arctic Ocean from Mesozoic to present day	'Active fault systems and submarine landslides along the Eastern Sakhalin slope, the Okhotsk Sea' by D.D. Rukavishnikova
131		'An automated cryogenic magnetometer at the Geological Survey of Norway for natural remanent magnetization and rock magnetism: A case study of North-East Atlantic continental margin sediments' by Martin Klug
132	15.2. Paleo-landscape analysis based on high- resolution marine data	'The Young Sound fjord system, NE Greenland – Insights from new marine shallow seismic and core data collected during the NorthGreen2017 expedition' by Lasse Nygaard Eriksen
133		'Paleo-river valleys near the Dogger Bank in the Danish and German sectors of the North Sea – an undiscovered tributary system to the Paleo Elbe Valley ' by Trine Andreasen
134		'Deep geology at Vejle Fjord – Paleogene structural control of a Quaternary fjord system' by Jakob Roued
135		'Late glacial to Holocene geological development of the western Limfjord – reconstruction of a dynamic paleolandscape' by Katrine Juul Andresen
136	15.3. The Quaternary geology of the North Sea Basin	'Near-shore seafloor depressions in the Western Limfjord, Denmark – potential geohazards? ' by Anders Dahlin
137	DOSIN	'Buried Valleys in the Danish Central Graben' by Lasse Krogsgaard Prins
138		'Morphology of the southeast Skagerrak (Denmark) from a new geophysical dataset' by Matthew Owen
139	15.4. Open session Marine Geology	'EMODnet Geology – a gateway to marine data in Europe' by Jørgen O. Leth

Poster #	Session	Poster Title and Author
140	16.2. Holocene coastal morpho-sedimentary systems: Archives, processes and forcing mechanisms	'Stratigraphy and sedimentary architecture of polder fills along the North Frisian Wadden Sea (southern North Sea) – potential archives of sea-level and climate variability (project SEASTORM) ' by Amalie Cordua
141		'Chronology and late Holocene evolution of Caleta de los Loros, NE Patagonia, Argentina' by Lasse Sander
142	16.3. Lidar in Geomorphology	'EcoMap Project: Baltic Sea environmental assessments by innovative opto- acoustic remote sensing, mapping, and monitoring. ' by Signe Schilling
143	16.1. Remote Sensing - Digital mapping, remote sensing and 3d models in Earth Science	'UAV topographic survey of a migrating dune – pitfalls and first results (Sylt, southern North Sea) ' by Benjamin Eberhardt
145		'Classification of block fields in Norway using Machine Learning' by Mads Nedergaard Paulsen
146		'UAV photogrammetry to monitor stability of rock climbing sites ' by Axel Hellman
147		'Safeguarding long records of geomorphological measurements using Structure-from-Motion from ground-based images' by Ivar Berthling
148	16.4. Open session in Geomorphology	'Landslides in northwest Iran: a case study on the landslide hazard zonation in Baleghluchai watershed in Ardabil using AHP Fuzzy method' by Keristineh Jananeh
149	17.1. Education, communication, preservation and Geoheritage	'Detailed mapping of the polydeformed Gressholmen and Rambergøya islands, Oslo Rift - a capstone course project at Oslo University' by Monika Oftedal Voll
150		'GIS - an appropriate tool for undergraduate field mapping? ' by Morten Aanvik
151		'Field-based education in the high Arctic – how digital tools can support active learning in Geology' by Kim Senger

Poster #	Session	Poster Title and Author
152	17.1 continued	'Stevns Klint, Denmark – UNESCO World Heritage Site and how to conduct geological research at the site in the future' by Jesper Milàn
153		'Soapstone from Nuuk: Communicating scientific and commercial value of a local resource ' by Rebekka Knudsen
154		'GEARS: Geological heritage in inner Scandinavia' by Terje Motrøen
155	18.1. Other Sessions	'DETERMINATION OF PALAEOPRODUCTIVITY USING CARBON QUALITY IN AN END MEMBER MIXING MODEL' by Justin Fadipe
156		'Surface kinematics of sorted circles using Structure from Motion photogrammetry in Juvfonne and Juvasshøe' by Andrea Gaustad
157		'Frequency-magnitude analysis for landslides in Sogn og Fjordane' by Håvard Mongstad
LOCATIONS

GETTING TO AND FROM THE CONFERENCE VENUE IN DTU'S BUILDING 101



GETTING TO AND FROM THE TECHNICAL UNIVERSITY OF DENMARK (DTU)

DTU's main campus is located in Lyngby 15 km north of Copenhagen. You can reach the main campus by car or by public transportation.

Address:

Anker Engelunds Vej 1 2800 Kgs. Lyngby Danmark



BY BUS OR TRAIN

Several busses cross or pass the campus area and Lyngby Station is just 2 km away with even more bus connections.

Trains depart from Copenhagen Airport every 2 – 10 minutes with stops at the main stations of Copenhagen: Copenhagen Central Station, Vesterport, Østerport, and Nørreport.

The price of a ticket for this journey is around DKK 60.

From Nørreport you can take the **E** or **B** train to Lyngby station. From Lyngby station you can take bus **180** or bus **300S** to DTU. It is also possible to take bus **150S** from Nørreport directly to DTU – note that this might be quite full in rush hour.

You can see public transport connections on www.rejseplanen.dk.

GETTING AROUND BUILDING 101



DTU MEETING CENTER



(Møderum) 1 and 2















CARL§BERG FOUNDATION