
Virtual Seminar Series

IGCP 648 Supercontinent Cycles & Global Geodynamics

Join us this **Thursday 9th July at 15:00 GMT** for our next Zoom seminar with **Anna Gülcher**, PhD Candidate at ETH Zürich Institute of Geophysics, Switzerland presenting: **Towards a recipe of the deep Earth: chemical and rheological heterogeneity in the lower mantle.**

The seminar

Please remember to sign up using the online form [here](#) and encourage your colleagues and students to do the same.

If you are unable to access the online form please email either the seminar co-ordinator [Dr Sheree Armistead](#) or the IGCP648 project secretary [Dr Ross Mitchell](#) if you wish to participate. The meeting details will be emailed to you.

The seminars will be hosted on Zoom. If you do not already have an account, please sign up for their free one and download the Zoom app. Join meeting 5 minutes before the start time using the details provided to you via email.

Time zones

Tucson:	8 am (Thursday)
Toronto:	11 am (Thursday)
London:	4 pm (Thursday)
New Delhi:	8:30 pm (Thursday)
Beijing/Perth:	11 pm (Thursday)
Sydney:	1 am (Friday)

Speaker bio

[Anna Gülcher](#) is a PhD student in the Geophysical Fluid Dynamics group at ETH Zürich, Switzerland. She obtained her BSc in Earth Sciences in 2016 at Utrecht University, the Netherlands, after which she moved to Switzerland to pursue a MSc degree in Geophysics at ETH Zürich. Throughout her study Anna mainly focused on numerical modelling of dynamics of planetary interiors, while keeping an interest in geology, geochemistry and seismology. Her MSc thesis addressed tectonic and volcanic activity on our neighbouring planet Venus, for which she was awarded the ETH silver medal in 2018. For her current PhD research project, she focusses on the composition and dynamics of the deep Earth and its control on our planet's evolution. Besides her research, Anna is actively involved in the [Geodynamics \(GD\) Division](#) of the [European Geosciences Union \(EGU\)](#), as the Early Career Scientists (ECS) Representative and as one of the editors of the division's [blog website](#).

Abstract

The lower mantle is the largest geochemical reservoir in the Earth's interior, and it controls the style of mantle convection and, through it, the evolution of our planet over billions of years. Constraining the composition and structure of Earth's lower mantle, however, remains a scientific challenge that requires cross-disciplinary efforts. Questions that receive particular attention are what the nature of chemical heterogeneity in the lower mantle is, and how such heterogeneity has evolved over time and affected our planet's evolution. In this seminar talk, Anna will showcase some of her work that is aimed at integrating recent observations on lower-mantle heterogeneity from seismology, mineral physics and geochemistry into a coherent geodynamical framework. She will focus on the formation and survival of primitive reservoirs in Earth's mantle and their interaction and possible coexistence with recycled chemical heterogeneity. Moreover, she will touch upon a proposed style of lower-mantle rheology that is dependent on mineral fabric and deformation history, and its effect on mantle convection dynamics and plate tectonics. While she uses mainly geodynamical tools, Anna invites scientists from all disciplines of the Geosciences to join the discussion on our intertwined quest for a chemical and rheological recipe of the deep Earth.

Guidelines

- The seminar will be approx. 1 hour (30 – 40 minute talk followed by questions/discussion)
- Do not forward the meeting ID or password to anyone, this ensures the security of our seminars.
- When you enter the meeting you should automatically be muted, but if not, please make sure you are muted.
- Do not interrupt the speaker – all questions/discussion will be done after the talk. However, you may type questions in the chat window as we go (I'll ask you to read these out after the talk).
- If you have a question, please type a brief comment in the chat window and I will ask you to read out the question during the discussion, make sure you unmute yourself before asking the question.
- Please be respectful when you ask questions or participate in the discussion.
- We encourage participants to share their webcam footage so that the presenters can see the audience, but this is completely optional.
- The talk will be recorded if agreed by the presenter and a link will be sent around soon after the talk.
- We have a detailed code of conduct [here](#) that participants must agree to.