German Mineralogical Society

www.dmg-home.org

FROM THE PRESIDENT

Dear colleagues and friends,

Today is a stormy day while I am writing these lines and I wonder how we will cope with the current stormy times we are facing as scientists worldwide. Despite the stormy weather, I'm filled with optimism about our scientific community's ability to scope with the current grand challenges—together. As a grandfather, I ask myself what kind of world we will leave to our children and grandchildren? What can I, what can we do to make this place an even better place for future generations? So that we can live up to the motto "the best is yet to come" and make it a reality!

It is always a pleasure for me to meet with our incredible colleagues of our mineralogical society who have shaped and led our organization over the past years and decades. It is always inspiring to meet these great people who have set us on a good path and broaden my horizons! As I now take over as President of the German Mineralogical Society for two years, I am thankful to build on the great work that Horst Marschall, Friedhelm von Blanckenburg, Reinhard X. Fischer, and many others have prepared. I'm so grateful to the executive boards, working groups, and section leaders, and to everyone in the DMG showing such incredible commitment. I'm glad to be able to continue working with this amazing team and to have Horst as Vice-President, who has the experience that I'm still lacking. Thank you all for your dedication and for allowing me to rely on you. The German Mineralogical Society is a vibrant, thriving entity, a hub of activity where numerous dynamic members converge. What sets it apart is its remarkable spirit of engagement and its capacity to foster connections across diverse levels. This is what truly makes you and the mineralogical society special!

As a scientist, I have and have had the privilege of getting to know different aspects of our fascinating science. I was trained in mineralogy and geology at the University of Tübingen, where I was inspired by mineralogists and influenced by A. Seilacher (palaeontology) and W. Frisch (geology), who taught me how to engage students and make learning exciting (1983–1989). During my time as PhD student (1989–1991), I worked on high-temperature ceramics as oxygen sensors (l-probe). I saw first-hand the value of interdisciplinary thinking and research together with strong partners (Max Planck-Institute Stuttgart and industry, e.g., Mercedes-Benz). It is good to know that there are many applied mineralogists around, in industry and academia, to improve technology and make improved materials with a lower environmental impact.

For the habilitation I moved to Freie Universität Berlin to build up a rock-physics lab and to support students (1991–1998, including one year of unemployment). At that time, I was most influenced by the interdisciplinary DFG Collaborative Research Centre on "deformation processes in the Andes." I learnt how large collaborative projects can well connect people with different skills and characters work. Special thanks go to P. Giese (geophysics), who led this project with passion and introduced me to geophysics.

At the German Research Centre for Geosciences (GFZ – 1998–2009), I was first involved in research for geothermal energy and later in experimental geochemistry, carrying out experiments in mineral physics. This included setting up a high-pressure, high-temperature powder diffractometer at the German Electron Synchrotron in Hamburg and to become responsibility for the EPSILON experiment at the IBR-2 neutron source at the Joint Institute for Nuclear Research (JINR) in Dubna (Russia). I got the chance to carry out Brillouin experiments at the University of Illinois at Urbana Champaign for one year. This allowed me to set up a corresponding experiment at the GFZ.

I accepted in 2004 a professorship at the FU Berlin and was able to continue my research at GFZ. In 2006, I became head of the Section Environmental Geotechnique at GFZ. This was a challenging time for me as it moved me from more fundamental oriented research to curiosity driven applied geosciences. The main goal was to test underground storage of CO_2 as head of the European CO_2 Sink initiative. We held intensive discussions with residents in Ketzin and, with their support, were able to successfully carry out the first field test on-shore Europe, the CO_2 underground storage facility in Ketzin.

In 2009, I moved to Karlsruhe Institute of Technology (KIT) as chair of Technical Petrophysics. There I'm responsible for the State Research Centre for Geothermal Energy (LFZG) and to conduct research ranging from mineral physics, through volcanic activity, towards GeoEnergy themes in collaborative efforts, such as Underground Gas Storage (UGS – CO_2, CH_2, or H_2), nuclear waste disposal, or hydropower. These works have made me thoughtful and humble when it comes to science communication. Do we always keep facts and opinions separate? Can we be so convinced of our science that we maintain the necessary distance? Are we already in danger of becoming agitators or are we honest scientists who adequately inform politicians, authorities, and citizens about facts and our today's interpretation? Do we sometimes overstep boundaries and believe we are experts in other fields as well?

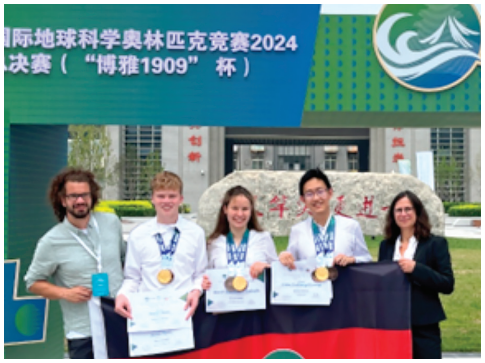
In all the different research fields curiosity has driven me. In all of them, I could only succeed due to fantastic colleagues and great support! It is good to know that excellent scientists form the next generation of innovative personalities who are able to better understand our dynamic planet and bring forward solutions for some of our grand challenges. This together will allow us to be a small cog in the machinery fulfilling my overarching hope as a grandpa "the best is to come."

Yours sincerely,

Frank Schilling

NEWS FROM DVGEO

Since 2023, the umbrella organisation of the geosciences (DVGeo) has been organising the German Earth Science Olympiad, the winners of which can take part in the International Earth Science Olympiad (IESO). Although geosciences are only taught as part of other school subjects or in elective courses in Germany, existing knowledge and interest among pupils is high: the German team won a total of eight medals at the IESO and over 3,000 pupils registered to take part in 2024.



The German medalists at IESO 2024: Keno Hein (Leer), Meret Urban (Jena), and Felix Huang (Munich) with their teachers Michael Albani (LEFT) and Sylke Hlawatsch (RIGHT) PHOTO: DVGEO.

In addition to its commitment to more geosciences in schools, DVGeo also organised several events for political decision-makers this year, e.g., on the topics of CCS, natural hydrogen, and deep geothermal energy.

Tamara Fahry-Seelig (Berlin)

DMG SHORT COURSE "DATA SCIENCE" 2024 – REPORT

The DMG Data Science Short Course 2024 took place at the Institute of Geosciences at Goethe University Frankfurt from 11 to 20 Sept. 2024. This year, 15 participants from different universities and institutions across Germany attended the course.

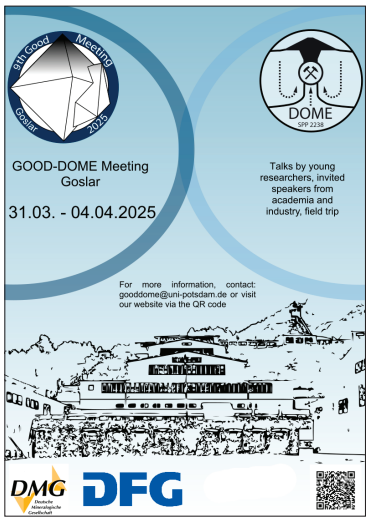
The course was organized by Dr. Dominik Hezel and was divided in a three-day online part and a three-day in-person part at the Riedberg campus.

The online part was primarily addressed to persons with little or no experience in Python programming, or those who wanted to refresh their skills. Here, the participants had the opportunity to get familiar with the basics of Python programming and Jupyter Notebook, focusing on the libraries, pandas, and matplotlib for data processing and visualization. The material for the online parts consisted of different tutorials and exercises, which were solved in small groups.

During the in-person part, a wide range of topics was covered:

On the first day, following a general introduction to data science, the participants learned about the use of databases and repositories for data storage. Leander Kallas presented "Georoc" as an example of a large database, highlighting its structure and the challenges encountered in its development. Jie Xu introduced "NFDI4Earth" along with an exercise on Living Handbooks and the Markdown language. Thomas Rose discussed the use of "GitHub" and "GitLab."

The second day featured a practical session by Miguel Bernecker on using parsers for data retrieval. Dominik Hezel provided insights into creating and publishing websites using the Streamlit software package, while Thomas Rose introduced the possibilities of building websites with Quarto for online publishing of articles or books. Dominik Hezel also gave an overview of digital lab notebooks and their potential benefits for the future. In the afternoon, Thibault Duretz led an exercise on numerical modelling, where the participants developed a one-dimensional model for the diffusion of strontium isotopes in an apatite crystal.



On the final day, the participants had time to continue working on their Streamlit websites. In addition, Johannes Faber introduced the field of machine learning and together we worked on a simple Python example, which was a new approach for many. Tamanna presented her PhD project in which she was using machine learning to classify volcanic rocks in the TAS diagram. Finally, the group discussed licenses and rights related to data and publications, concluding the course with an open discussion on data management and how to improve it in the perspective of growing data volumes within universities and institutions.

The participants of the DMG Data Science Short Course 2024. Photo: T. Rose.

In summary, the course offered a very interesting range of topics across various fields. The participants responded positively, and enthusiasm for data science was ignited even among those without prior experience. The provided videos and group work enabled beginners to grasp the fundamentals of Python, while those with more experience also gained valuable insights, such as effective data management practices and the use of electronic lab notebooks to prevent data loss and improve data organization. The diverse professional backgrounds and interests of the participants lead to rich exchanges and engaging discussions throughout the course. Coffee breaks and a barbecue in the institute's courtyard also provided great opportunities for personal interactions and networking.

Joana Niechziol & **Lara Friedrichs**
(Goethe University Frankfurt)

DMG SHORT COURSES 2025

As before, DMG will support several short courses in 2025. All courses will be aimed primarily at advanced-level undergraduate and graduate students but, as always, are open to more senior researchers as well. Nonlocal student members of DMG will be eligible for travel support to the amount of € 100. Further information can be found at www.dmg-home.org/aktuelles/doktorandenkurse/.

(2-25) **FIERCE Isotope Short Course 2025**, FIERCE – the Frankfurt Isotope and Element Research Center, Institute for Geosciences, Goethe University Frankfurt, 11–14 March 2025 (www.fierce.uni-frankfurt.de/FIERCE_Isotope_Short_Course)

(5-25) **Early Earth Evolution**, Geozentrum, Georg-August-Universität Göttingen, Thomas Müller, 25–28 March 2025 (thomas.mueller@geo.uni-goettingen.de, www.uni-goettingen.de/en/633334.html)

(6-25) **Metal stable isotopes as fingerprints in the Earth and the environment**, GFZ Potsdam und FU Berlin, Fachbereich Geowissenschaften, Friedhelm von Blanckenburg, Patrick Frings, 31 March–5 April 2025 (patrick.frings@gfz-potsdam.de, f.v.b@fu-berlin.de)

(7-25) **Solid State NMR-Spectroscopy**, Institut für Geologie, Mineralogie und Geophysik, Ruhr-Universität Bochum, Michael Fechtelkord, 10–13 June 2025 (michael.fechtelkord@rub.de, www.ruhr-uni-bochum.de/dgk-ak12/workshops/dmgshortcourse)

DMG SECTION MEETING PETROLOGY/ PETROPHYSICS & GEOCHEMISTRY

Save the dates of June 6 and 7, 2025, at GFZ Potsdam for the next joint meeting of the DMG Petrology/Petrophysics and Geochemistry sections: https://events.gfz-potsdam.de/section-meeting-of-the-dmg-geochemistry-petrology.