GeoBerlin 2023
175th DGGV Anniversary and 150th PGLA (BGR) Anniversary
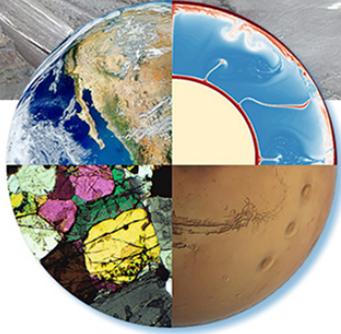Berlin | 3 – 8 September 2023

Theme descriptions GeoBerlin 2023

1   Earth and Society: Climate, Sustainability and Natural Resources

Earth processes impact society and vice versa. Climate change, global population growth, increasing welfare as well as geopolitical developments worldwide sharpened the awareness of resilient and sustainable energy, mineral and water supplies. Renewable geoenergy and the exploration and storage of energy, heat and waste (geothermal heat, hydrogen, transitional gas, nuclear disposal and CCS) need innovative exploration concepts. Similarly, research on the formation and exploration of energy metals and raw materials for industrial processes and welfare result on yet unexplored alternative resources such as brine mining. Groundwater, overall, is the foundation of life and thus the most critical natural resource affecting society. We ask for contributions from both fundamental to applied sciences.

- Climate: mitigation & society
- Geo hazards & risks
- Geoenergy & energy storage
- Lithium mining
- Underground storage (CCS, nuclear waste)
- Mineral exploration and recycling
- Groundwater / hydrogeology

2   Early Earth Processes and Long-Term Earth and Planetary Evolution

We welcome session suggestions covering the formation and long-term evolution of the Earth and other planetary bodies. This includes specifically session covering experiments, observations, and modelling approaches from the formation of the solar system, accretion and differentiation of the Earth (including delivery of volatiles) and the early settings for the formation of life. Furthermore, we invite sessions focussing on global planetary processes of the changing world, including the initiation of plate tectonics on early Earth, volcanic activity over geological timescales, and the coupled evolution of planetary interior and atmosphere (incl. global climate changes and great oxygenation of the atmosphere). Sessions may focus on

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Earth alone or on comparative planetology within and beyond the solar system, including active or planned space missions.

- Late accretion processes and delivery of volatiles
- Building a habitable, early Earth
- Great oxidation events
- Structure and evolution of planetary bodies
- Long-term feedbacks between interior and atmosphere
- Onset of plate tectonics, habitable conditions and life
- Exoplanets

3   Understanding the Earth System – From Endogenic to Exogenic Processes that Shape the Earth

This theme aims at understanding the Earth system and the interplay among endogenic, exogenic and biogenic processes, and includes topics ranging from dynamic interactions between deep Earth and surface processes, tectonic processes, mid-ocean ridge formation to sedimentary systems.

Session proposals and contributions related to the one of the following topics are welcome:

- Earth surface and sedimentary processes
- Stratigraphy and time scales of Earth system processes
- Role of the biosphere in marine and continental systems
- Subduction and collision processes
- Rifting, continental breakup and MOR processes including hydrothermal systems
- Dynamic interactions between deep Earth and surface processes
- Magmatic and volcanic processes
- Regional geology

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4 Managing the Future of Earth Sciences: Data, Citizen Science, Education, Outreach

Availability of data has exploded in all scientific disciplines. This requires innovative data driven workflows and infrastructure. In particular, research and geodata management, data accessibility and credit need major advances. At the same time, major geoscientific themes around the changing Earth systems still receive limited attention in education and the public. An increasing number of schools, universities, museums, science centres, temporary exhibitions and geoparks try to improve this situation and develop innovative learning and teaching concepts.

Session proposals and contributions related to one of the following topics are welcome:

- Open Science (data repositories, research infrastructure, FAIR principles)
- Geoscience and Research Data Management
- Geo-Analytics (machine learning, artificial intelligence, big data)
- Advances in computational geosciences: new methods, integration of scientific data, software, and workflows
- Analytical data management and methods development
- Science communication and outreach
- Citizen science
- Geoscience education at schools and universities
- Nonformal education, museums, geoparks
- World heritage sites, geotopes, nature protection