Institut für GEOWISSENSCHAFTEN und GEOGRAPHIE
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MARTIN-LUTHER-UNIVERSITÄT
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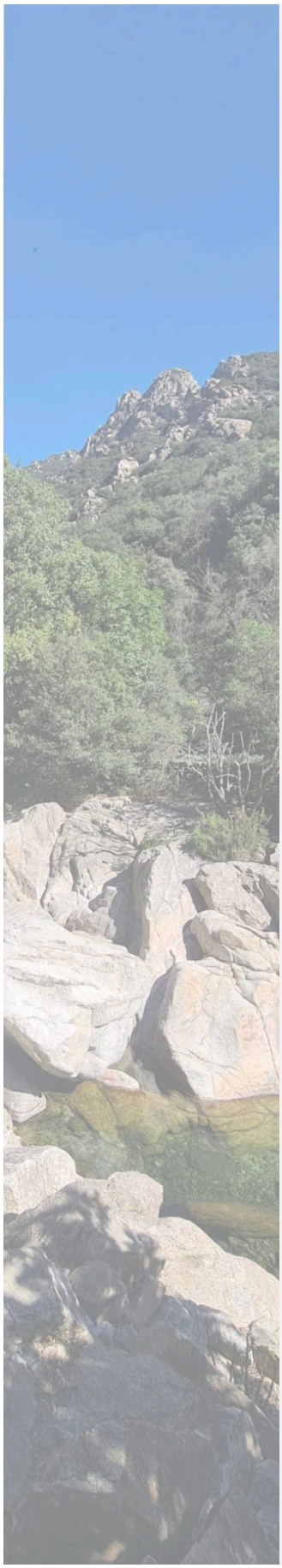

Di 09.12.2025
16.15 Uhr

Frau Prof. Dr. Simona Regenspurg

GFZ Helmholtz-Zentrum für Geoforschung, Leiterin der Arbeitsgruppe 4.3.9 Geothermische Fluid GFZ

Critical raw Materials in geothermal Fluids – Perspectives from the North German Basin

Prof. Dr. Simona Regenspurg

The EU-funded project "CRM-Geothermal"pursues a holistic approach to the evaluation and extraction of critical raw materials from geothermal fluids in Europe and East Africa. Its objectives are as follows: (I) To assess the overall potential, a database was established and the collected fluid data have been visualized in a fluid atlas. (II) The origin and mobilization of CRMs was investigated for different geological settings (e.g., in crystalline, fractured rock or in deep sedimentary basins where high--salinity waters circulate through porous formations) in order to make predictions about the occurrence and sustainability of extraction during fluid circulation. (III) Innovative extraction technologies have been developed for some CRMs, such as lithium, strontium, and helium, for different fluid types. Furthermore, economic, social, and environmental aspects of the processes have been considered, and finally (V) the feasibility of CRM co-extraction are demonstrated at one site. In this presentation the focus lies on the geological and geochemical conditions that control the amount of CRM in brines of sedimentary basins. Currently, the North German Basin (NGB) obtains some attention due to its high Li content in deep brines from Bunter and Rotliegend sandstone (up to 600 mg/L). Comprehensive data, rock, and fluid samples were obtained from the 4000 m deep geothermal research well in Groß Schönebeck (Germany).