Institut für Angewandte Geophysik

Frühjahr 2025

Vortragsreihe mit Diskussion

Das LIAG-Seminar findet alle zwei Wochen, jeweils dienstags um 11 Uhr, statt. Nach einem ca. 30-minütigen Vortrag besteht die Möglichkeit zur Diskussion. Die Präsentationen werden entsprechend der Ankündigung im Programm auf Deutsch oder Englisch gehalten.

Die Teilnahme kann vor Ort im großen Sitzungssaal des Geozentrum Hannover erfolgen oder online via Webex (Link unter www.leibniz-liag.de).

18.03.2025 ..... **Rock magnetic estimation of precipitation from topsoils**

Christian Zeeden

Recent research conducted at LIAG regarding the geophysical properties of soils and fossil soils from both Europe and India will be presented. A special emphasis will be placed on the discussion of what knowledge can be gained about precipitation and possibly groundwater recharge. The presentation will focus on current projects in the Danube catchment and Kashmir/India.

01.04.2025 ..... ***Kein LIAG-Seminar (Veranstaltung vom LBEG)***

15.04.2025 ..... **Static modelling in the exploration of reservoirs - examples from current research projects**

Hartwig von Hartmann, Majdi Al-Howidy, Jan Ahrens, Timon Stamatopoulos

Department 3.2 of LIAG deals with various research questions relating to the exploration of geothermal reservoirs. This includes analysing seismic anisotropy, seismic inversion and log interpretations. The investigations deal with the analysis of the spatial distribution of the reservoir parameters and the relationship to the sedimentological and tectonic conditions. The overall objective is a spatial-quantitative parameterisation of reservoirs.

29.04.2025 ..... ***Kein LIAG-Seminar (Veranstaltung vom LBEG)***

13.05.2025 ..... **Imaging fault zones with 3D modeling and inversion of SAEM data**

Maryam Bayat

Using ground-based transmitters and airborne receivers, we investigate the applicability of the semi-airborne electromagnetic (SAEM) measurement technique for imaging subsurface structures such as faults or folds. The goal is to test the method's capabilities for geological investigations in a broader sense beyond a specific mineral or groundwater exploration context. The presentation will include both, 3D synthetic studies and inversion results of real data collected in a faulted region in the framework of the GeoMetEr project. Furthermore, we performed a joint inversion of synthetic magnetic and synthetic SAEM data in view of integrating multiple geophysical datasets to improve the resolution and achieve a more reliable characterization of fault zones.

27.05.2025

Evaluation of Geothermal Reservoir Characterization in the Brussels Sand of the North German Basin

Majdi Al-Howidy

The North German Basin offers both challenges and opportunities for geothermal energy development, with a focus on the Brussels Sand from the middle Eocene. The presented study combines geothermal data, well logs, and mud logs to explore low-temperature reservoirs, highlighting their potential for district heating and further economic evaluation.

10.06.2025

Dolomite thermoluminescence thermochronometry and its application in central Apennines (Italy)

Junjie Zhang

Reconstruction of the cooling and exhumation history in carbonate rock regions has so far been hampered by the lack of appropriate thermochronological methods. A new thermochronometry tool based on the thermoluminescence signal of dolomite is being developed at LIAG. It has a closure temperature of 45–75 °C and is applicable to carbonate domains with cooling rates of 2–200 °C/Ma. The potential of this new method is being tested in the central Apennines, where carbonate-hosted normal faulting controls regional neotectonics.

24.06.2025

Insight into the structural characteristics of the Osning Fault System and its geological evolution based on high-resolution reflection seismic and geological modelling

Sonja Wadas & Julia Rudmann

Neotectonic movements on faults can pose a major hazard, and are scientifically and socially relevant, especially for seismic hazard assessment and subsurface utilization. In northern Germany little is known about neotectonic processes and the associated structures, despite proven neotectonic activity, because many faults are hidden beneath sediments. To improve this knowledge and to get a better insight into the evolution and the deep and shallow tectonic structures, and thus the fault geometry and kinematics, we investigarted the Osning Fault System by a combined geophysical and geological approach, integrating high-resolution P- and SH-wave reflection seismics and geological modelling/retrodeformation of previously-published geological cross-sections.