Johannes Gutenberg University Mainz (JGU) is one of the largest universities in Germany. Thanks to its location in the Rhine-Main science region, the university can unfold to its full potential and showcase its innovative power and dynamism. Its status as a comprehensive university allows for multidisciplinary learning and teaching and has great potential for internationally renowned, interdisciplinary research. Almost all of its institutes are located on a single campus close to the Mainz city center – creating a lively academic culture for researchers, teaching staff, and students from every continent.

**Faculty 09: Chemistry, Pharmaceutical Sciences, Geography and Geosciences / Institute of Geosciences / Endogenous Geosciences / Geophysics of Johannes Gutenberg University Mainz**

# Academic staff member Seismologist / Geophysicist

full-time (100 %)

We are looking for a candidate as part of the TRIGGER project (Formation of fractures and changes in permeability in geothermal reservoirs caused by thermally induced stress changes) funded by the Federal Ministry of Economics and Climate (BMWK) to work on the evaluation and interpretation of acoustic emissions from laboratory tests. The aim of the project is to understand the long-term effects of temperature changes in geothermal reservoirs. To this end, laboratory tests on drill cores, comprehensive microstructural and microchemical analyses and modelling will be carried out to determine a temperature change of at least 100 K on crack formation and fluid-rock interactions (dissolution/precipitation) and thus on rock mechanical properties, porosity and permeability on the sample scale.
The candidate will participate in deformation experiments carried out at the Ruhr University Bochum (RUB). Acoustic emissions will be recorded, which will provide information about the fracture processes on a sample scale, similar to seismic recordings of earthquakes on a field scale. The role includes the development of novel tools to analyse the fracture processes as well as tomographic imaging of the drill cores.

## What we have to offer:

- Exciting work environment in an interdisciplinary project
- Jobticket, optional for the entire Rhine-Main area
- Extensive human resources development offer
- Flexible working time arrangements

The position is paid according to **EG 13 TV-L** and to be filled on by 4/1/2025. The position is temporary for a fixed term of maximum 3 years.

JGU is diverse and welcomes qualified applications from people with varied backgrounds.

We aim to increase the number of women in the field of research and teaching and therefore encourage female researchers to apply.

Candidates with severe disabilities and appropriate qualifications will be given priority.

Are you ready for a new challenge and interested in this varied and responsible position? Then submit your complete application *[cover letter, CV, relevant (work) certificates (with German recognition if applicable)]* by 1/5/2025, preferably via the

## Your tasks:

- Collaboration in research and development of novel, efficient AI tools for the automatic evaluation of acoustic emission data
- Application and further development of standard methods for determining fracture location, fracture type and magnitude
- Method development for attenuation tomography on a sample scale
- Participation in the execution of the deformation experiments and close cooperation/exchange with the RUB project partners
- Collaboration with project partners to integrate the knowledge gained into the modelling sub-projects
- Support the PI in the preparation of materials for project meetings/reports in German
- Publish results in peer-reviewed journals and present at project meetings, conventions, and international conferences

## Your profile:

In addition to the general requirements according to public services law, applicants must meet the recruitment requirements stipulated in § 57 of the *Hochschulgesetz* of Rhineland-Palatinate.

- A successfully completed university degree preferably in geophysics, geosciences or physics
- PhD in geophysics (preferably seismology, acoustic emissions or experimental geophysics) or a related discipline
- Knowledge and experience with the localisation of seismic events and passive seismic methods
- Good programming skills (Python, Matlab,...)
- Experience with AI approaches desirable
- Willingness and interest to travel to project meetings and participate in the deformation experiments
- Excellent communication skills and teamwork

„Apply now“ button.

For questions and further information please contact Jun.-Prof. Dr. Miriam Christina Reiss, by phone 06131/39-30846 or e-mail: miriam.reiss@uni-mainz.de.

Data protection information

Apply now

- Very good knowledge of German and English

JOHANNES GUTENBERG UNIVERSITÄT MAINZ