Institute of Rock Mechanics and Tunnelling

Join Our Research Team:
Shape the Future of Sustainable Underground Engineering!

- University Position in Scientific Collaboration & Doctoral Research (Dr. techn.)
- 30 hours to 40 hours (Full-time) | limited to a fixed term of 36 months
- Based in Graz, Austria
- Starting: ASAP

✓ Are you passionate about geotechnical engineering, tunnelling, and sustainable energy systems?
✓ Do you want to contribute to cutting-edge international research while pursuing your doctorate?

Then join us in two exciting research projects: SPURM and REgENEraTE!

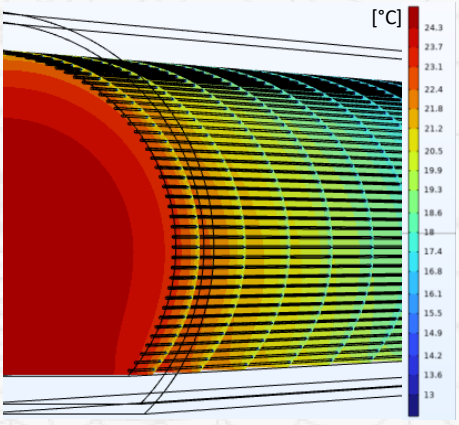
We are offering a dynamic position within a leading research institute, where scientific curiosity meets real-world impact. You'll be part of a motivated, interdisciplinary team working at the forefront of underground infrastructure, energy transition, and numerical modelling.

Your Role

As a scientific collaborator, you will be actively involved in two forward-thinking projects funded by the Austrian Research Promotion Agency (FFG) and the DUT programme:

REgENEraTE – REuse for ENergy Exploitation and storage of existing urban Tunnels in Europe

The REGENERATE (FFG Project No. 918139) project investigates how existing underground structures, such as tunnels and air-raid shelters, can be repurposed to produce and store thermal energy, supporting sustainable urban energy systems. To achieve this, universities across Europe are collaborating, including Politecnico di Torino in Italy, Technical University of Darmstadt in Germany, Technical University of Cluj-Napoca in Romania and the Graz University of Technology in Austria.

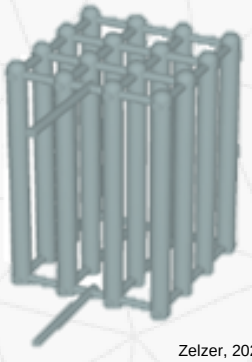


Geisler, 2024

This project focuses on:

- Concepts for integrating geothermal systems into existing urban infrastructure
- Long-term thermal and mechanical performance monitoring
- Work within an international consortium of leading universities, research institutions, and industry partners across Europe, offering extensive opportunities for cross-border collaboration and knowledge exchange

SPURM – Storage Potential of Underground Rock Mass



Zelzer, 2023

The FFG project SPURM (FFG Project No. 5125957) investigates how large-scale heat storage caverns can contribute to achieving climate neutrality by 2040. It focuses on planning, constructing, and evaluating underground thermal storage systems that shift surplus renewable energy, such as summer heat, to periods of high demand in winter, ensuring environmental compatibility and economic viability.

You will contribute to a novel concept for urban underground resource usage, integrating:

- Rock and rock mass characterisation
- In-situ geophysical and structural observations
- Numerical modelling of underground processes
- Cross-disciplinary planning and design tools

What We Offer

A scientific staff position with the opportunity to pursue a Doctorate (Dr. techn.) during your employment!

- Work on high-impact, interdisciplinary, international research projects
- A collaborative, supportive research environment within a renowned Austrian university
- Access to state-of-the-art lab facilities, rock mechanical laboratory, field test sites, and simulation tools
- Flexibility for personal academic development (conferences, training, networking)
- Salary based on the Austrian Collective Agreement for University Staff (B1)
- We offer an annual gross salary of at least € 52,007.20 for a fulltime position

Your Qualifications

We are looking for a highly motivated team member with:

- A completed master's or comparable diploma degree in civil engineering (preferably geotechnical), geosciences, or a related field
- Solid knowledge of geotechnics and tunnel construction, incl. NATM and TBM methods
- Solid understanding of geothermal energy solutions
- Expertise or strong interest in numerical modelling (FEM, DEM) and geothermal simulation programs (such as Comsol Multiphysics)
- Experience with rock mass classification and characterisation systems
- Very good command of German (written and spoken, confident in business discussions) and solid knowledge of English (minimum B2 level)
- Strong organisational and communication skills; experience with project management

Additional Responsibilities

- Contribution to the administrative and academic operations of the research institute
- Participation in student mentoring, teaching assistance, and scientific outreach
- Collaborative publication of research results in journals and conferences

Contact

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Join the RMT team at TU Graz – we look forward to your application!