

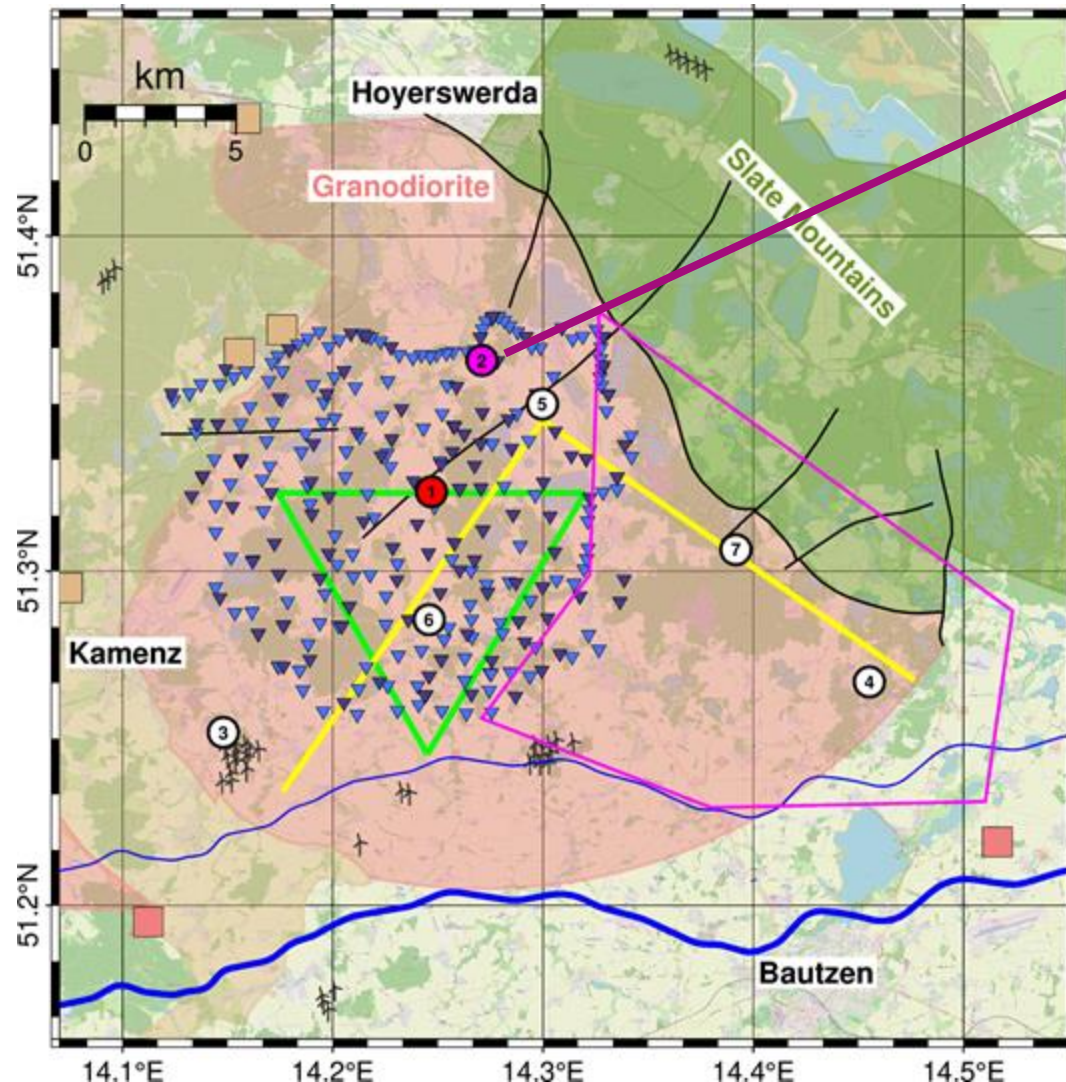


# Updates on site characterization at the proposed Lausitz, Saxony



- ❖ **Ongoing drilling activity: 1 borehole completed, 2 being drilled; 2 more commissioned (OF and BB seismometer)**
- ❖ **Design study for LSL started (layout like 1 corner for ET)**
- ❖ **Hydrological tests**
- ❖ **Dedicated array for incoming seismic noise field deployed**
- ❖ **Gravity measurements ongoing**
- ❖ **Seismic monitoring ongoing**
- ❖ **DAS resolution tests ongoing**
- ❖ **NN modelling ongoing**

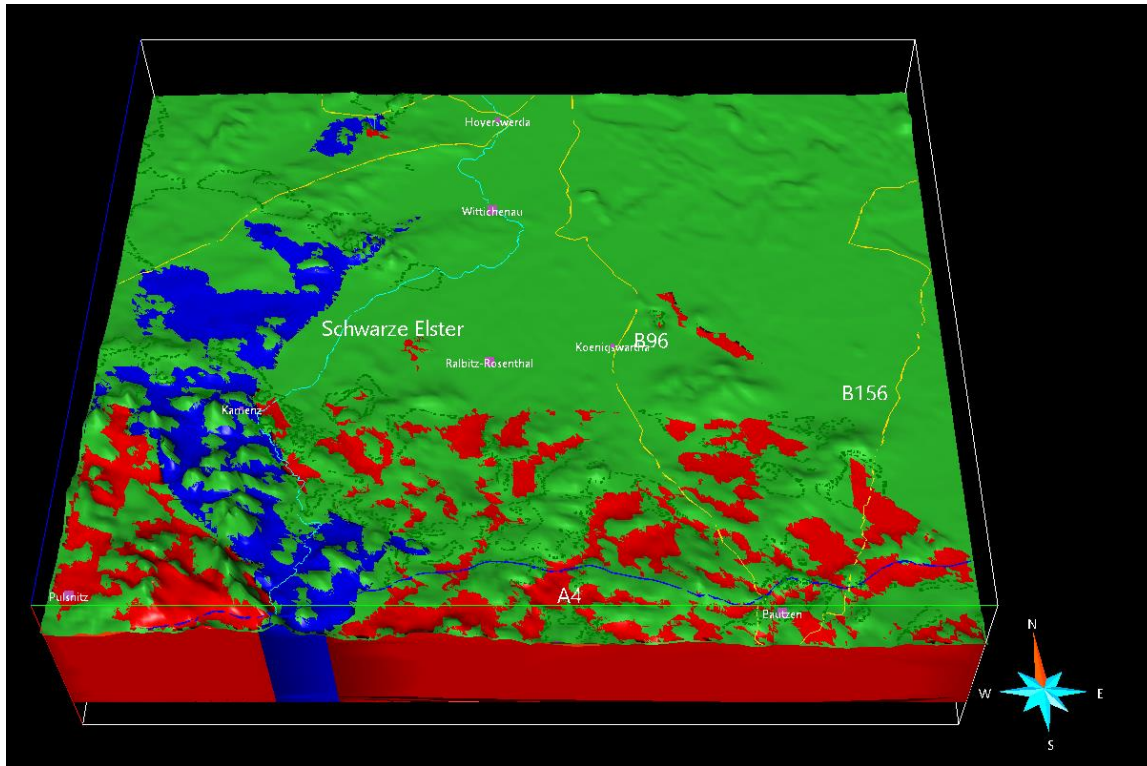
# Current status and activities



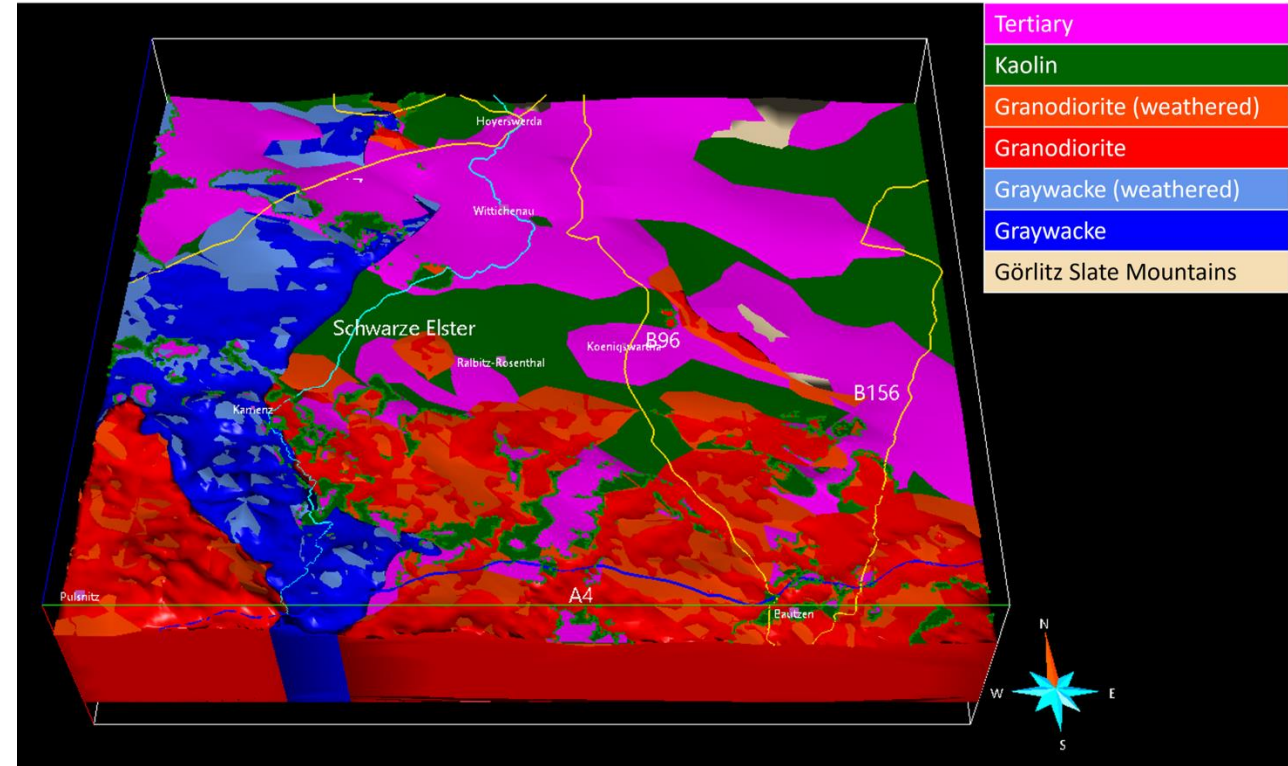
- target area within city triangle Hoyerswerda-Kamenz-Bautzen
- granodiorite with Quaternary/Tertiary overburden and Kaolin deposit
- western and eastern seismic Array (1 month, 200x 1C + 10 TC20s)
- backbone in western area (1 year, 100x 3C)
- 7 instrumented boreholes (1 running, 1 drilling, 4 starting in the next months, one in winter/fall 2025)
- prominent noise sources include: Autobahn 4, Windparks, Quarries
- noise measurements (surface/borehole) cover both ET geometries
- Additional two boreholes (8/9) planned for misc. noise (e.g., magnetic)
- separate noise measurement campaign around wind park (incl. borehole 3) by KIT



# Integrated Geological Model: Base for noise evaluation

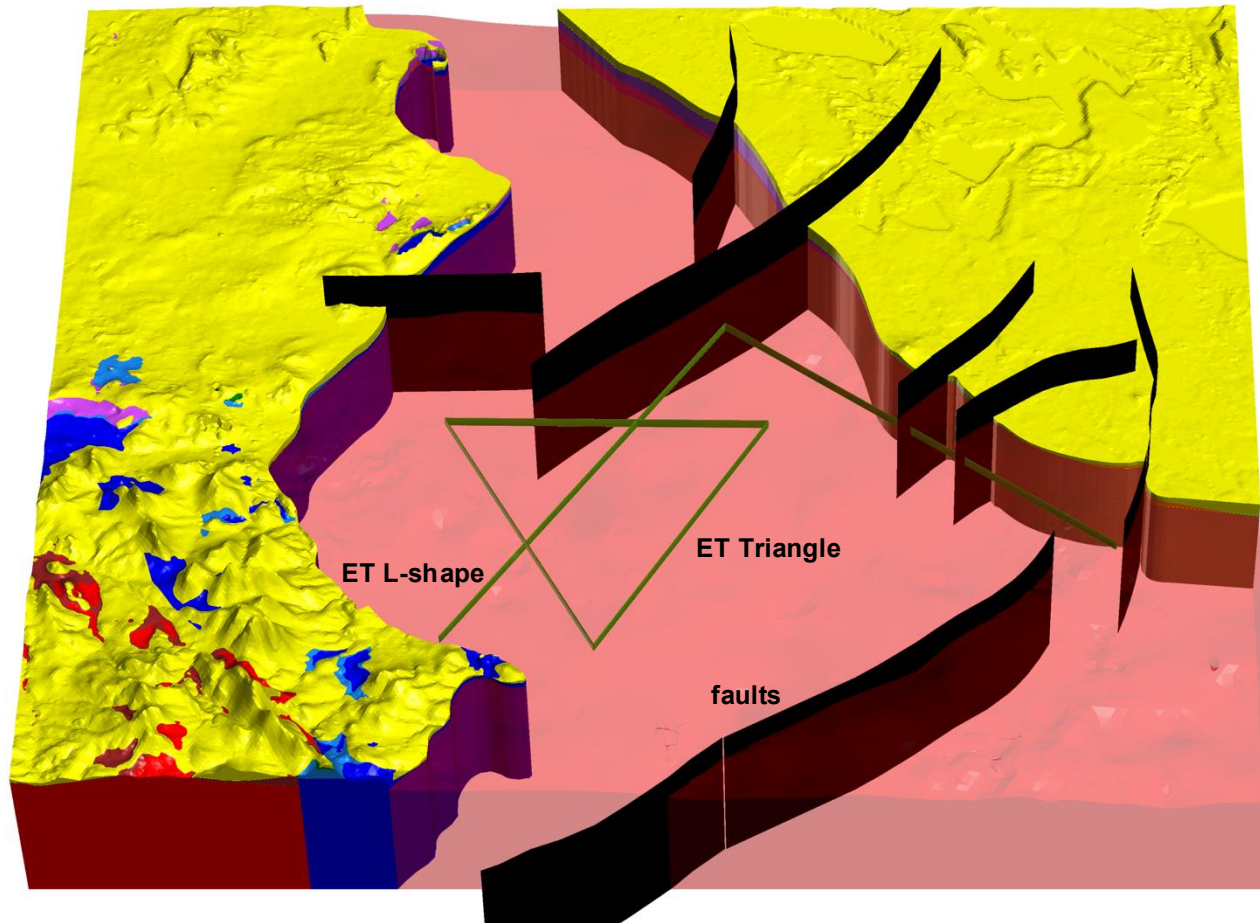


Surface expression



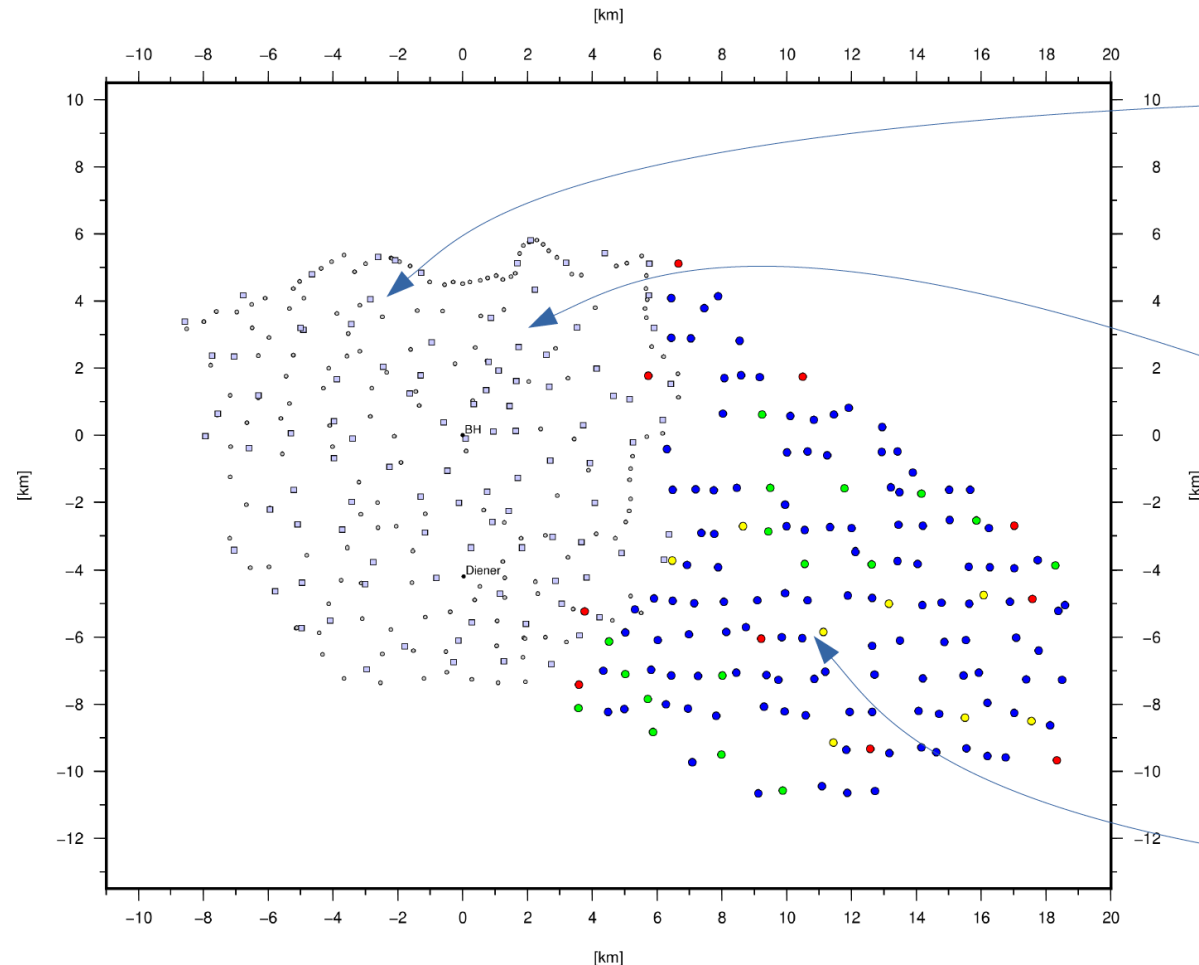
Quaternary cover stripped

# Geological model – ET and faults



Cap rock	Quaternary		
	Tertiary		
	Kaolin		
Base rock	Weathered granodiorite	Weathered greywacke	Görlitz Slate Mountains
	Granodiorite	Greywacke	

# Seismological Site Investigation (I)

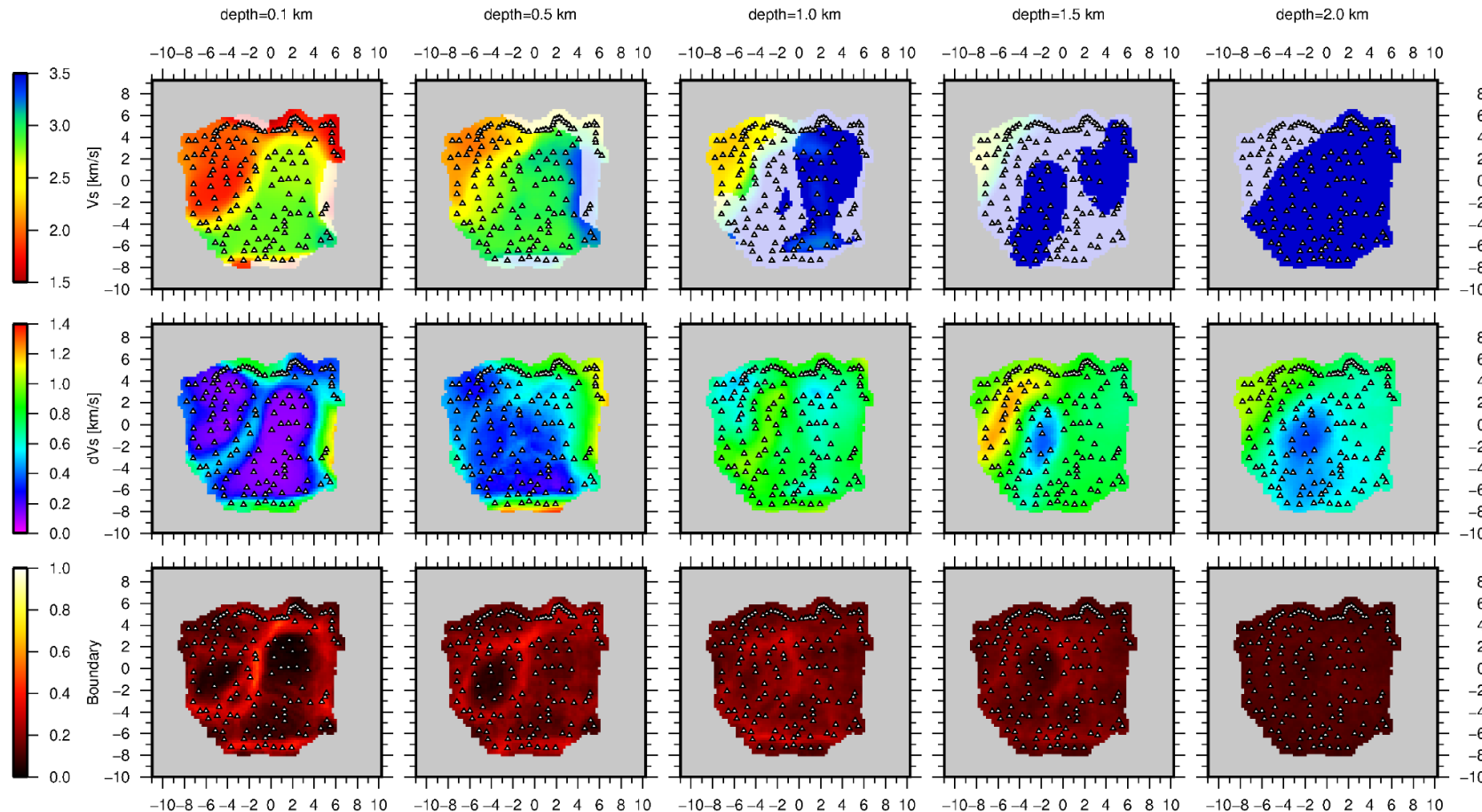


**Short-Term deployment**  
5 weeks; March/April 2024  
209 stations  
200 with 1C geophones  
9 with TC

**Backbone deployment**  
~ 1 year; Dec. 2024 – Dec. 2025  
209 stations  
200 with 1C geophones  
9 with TC

**East-extension deployment**  
~ 5 weeks; ~June 2025  
156 stations  
121 with 1C geophones  
rest with TC, 3C-geophones

# Seismological Site Investigation (II)



/remote/geso7-projects/mcmc/3D-ANT/DZA/DZA14

Shear wave  
velocity

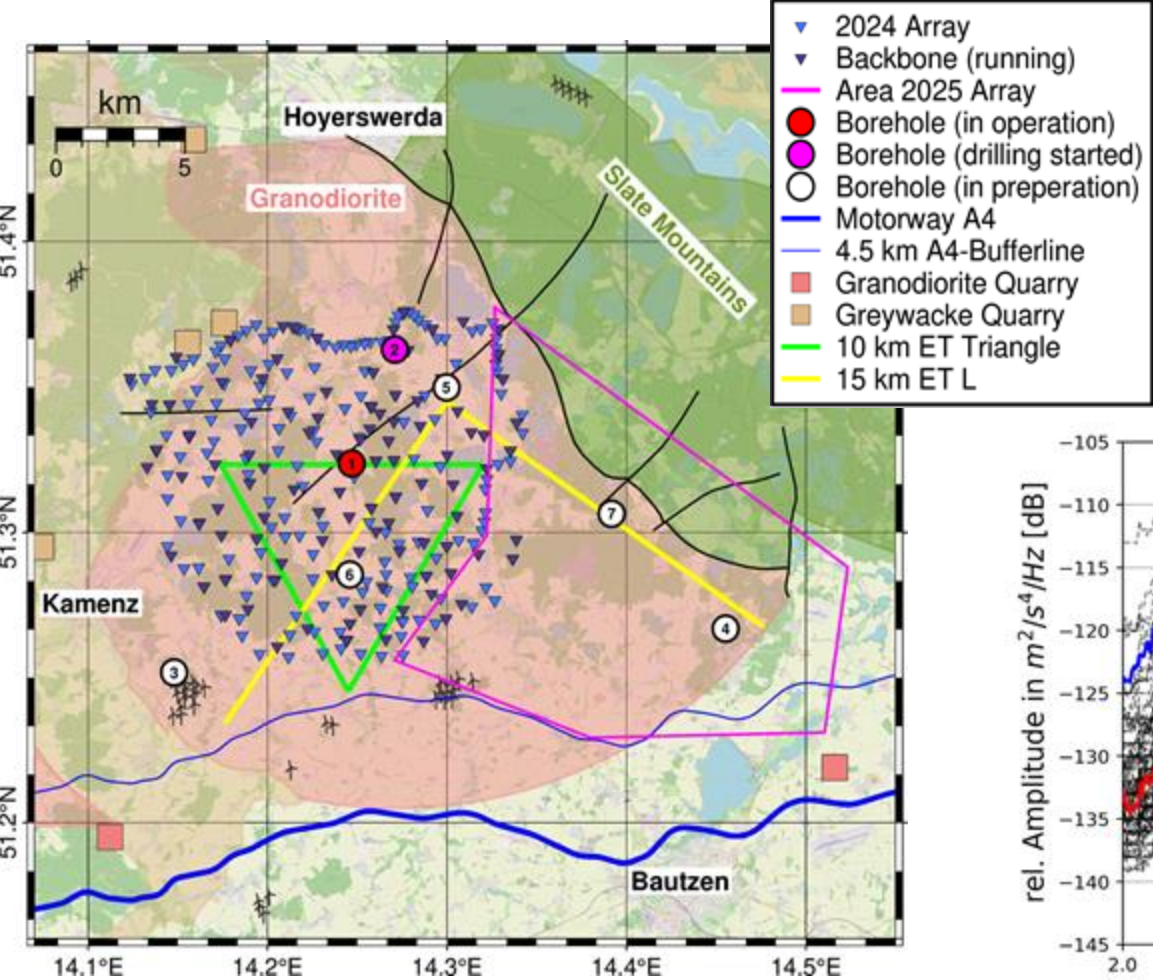
Uncertainty

probability of a sharp  
velocity boundary

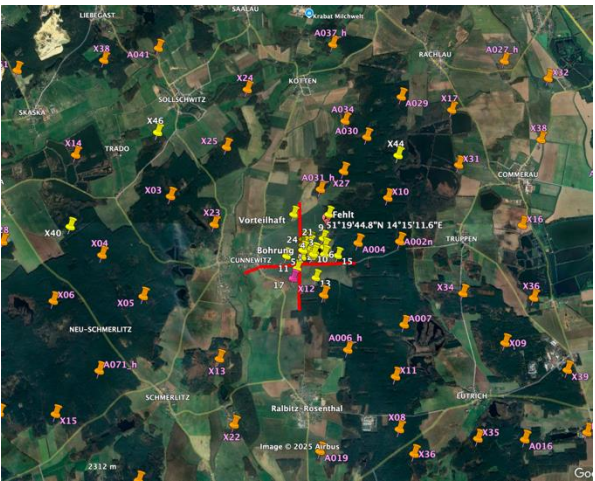
Haberland&Ryberg et al, GFZ



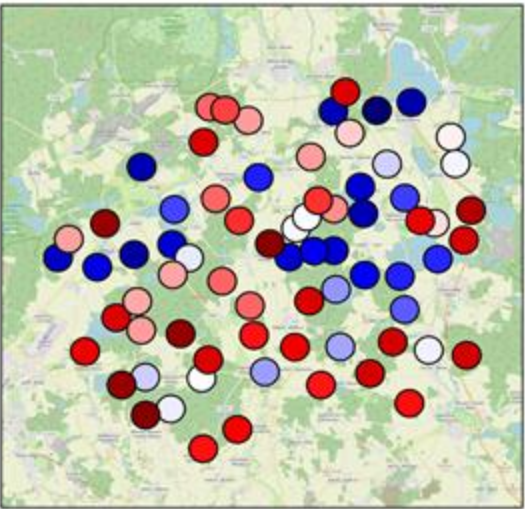
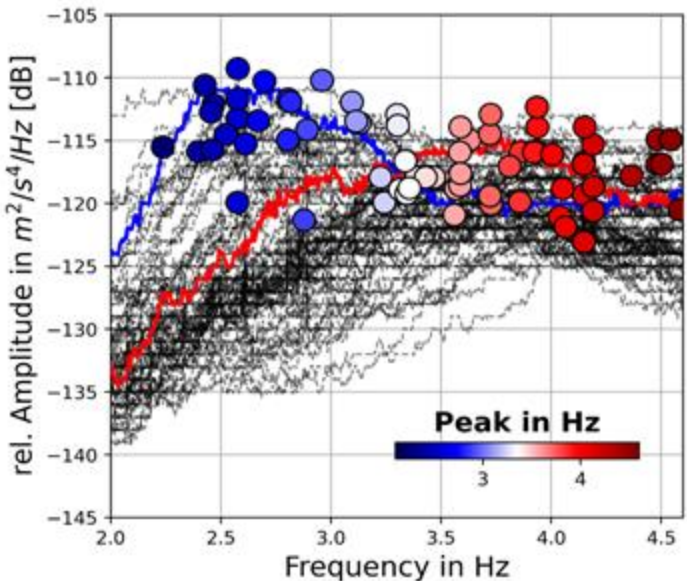
# Ambient noise analysis



Ambient noise network in Lusatia



3C seismic array has been deployed to characterise the incoming noise field

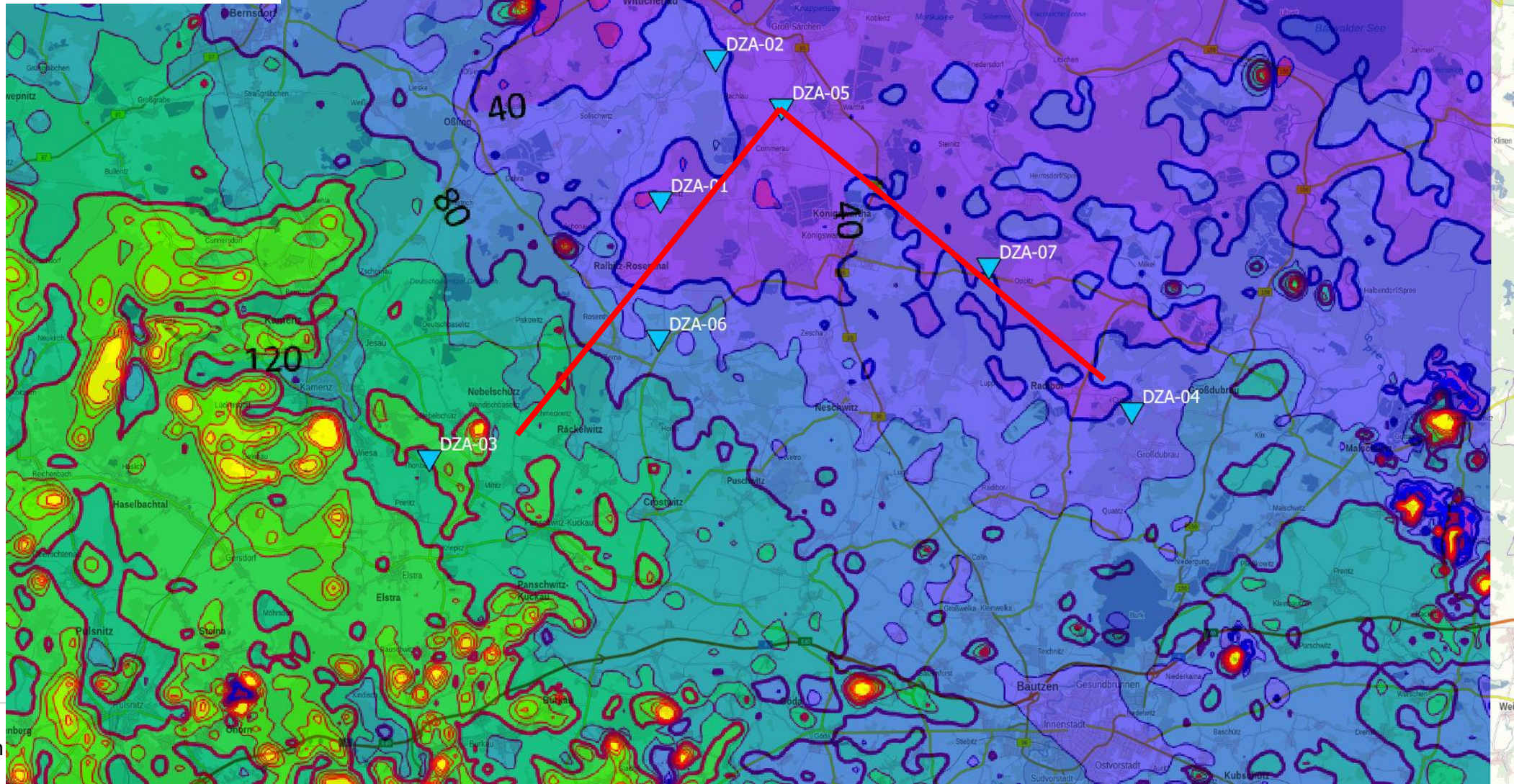
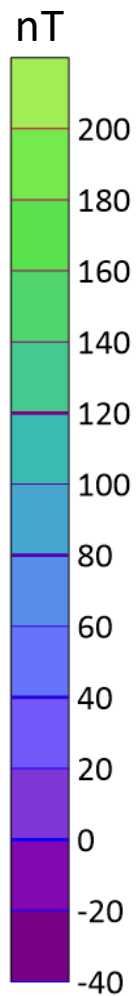


Spatial pattern of noise peak in Lusatia. Borehole is located in blue area

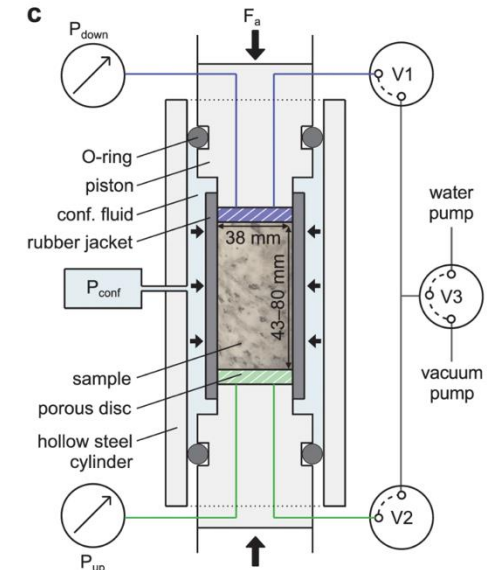
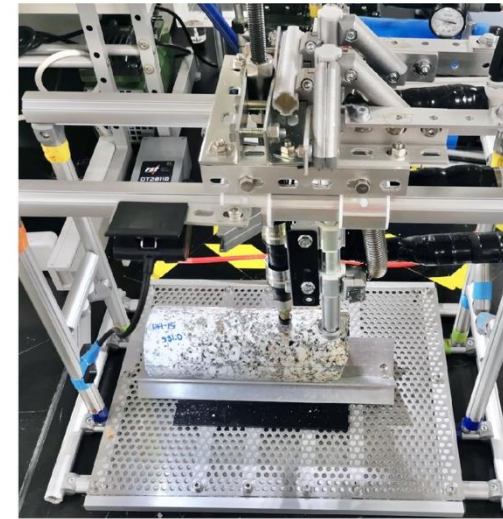
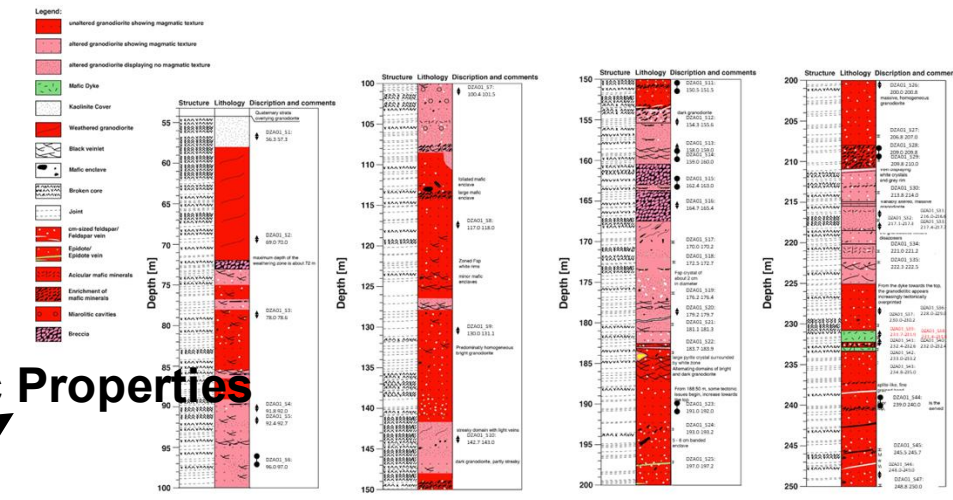
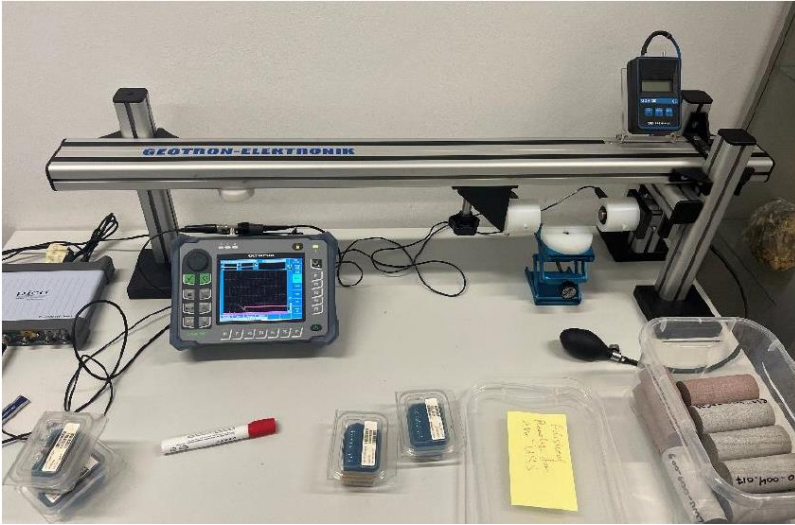


# Geomagnetic detail map of resarech area

-isolines

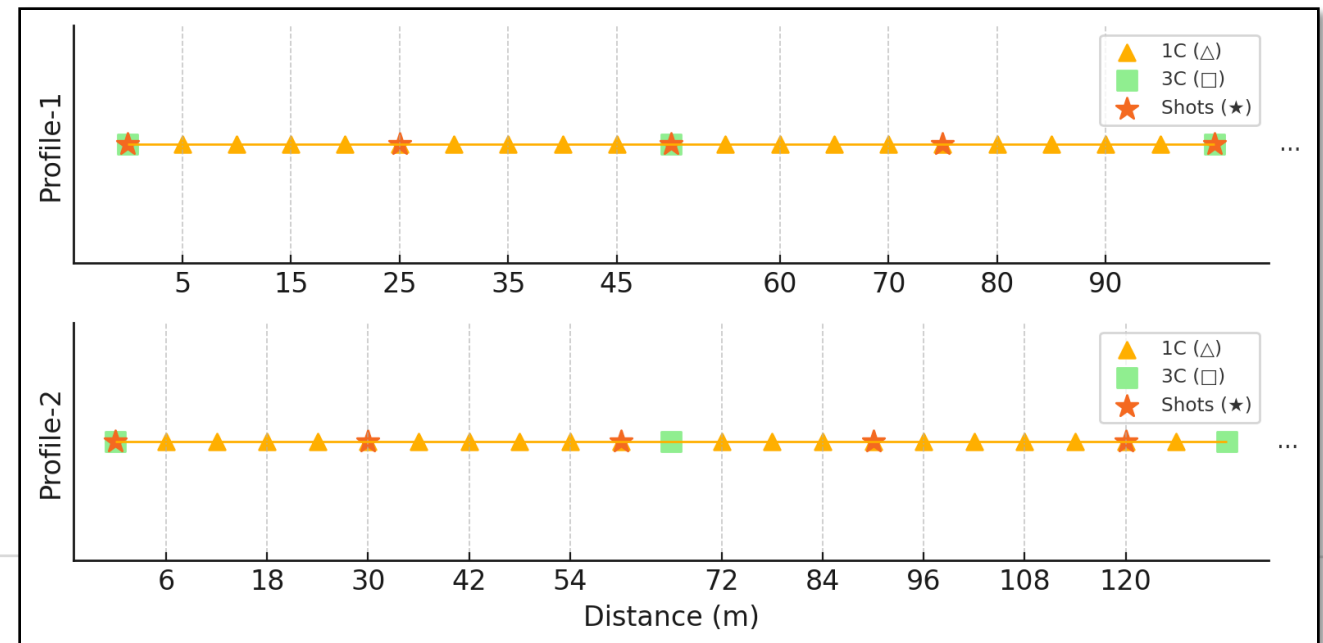
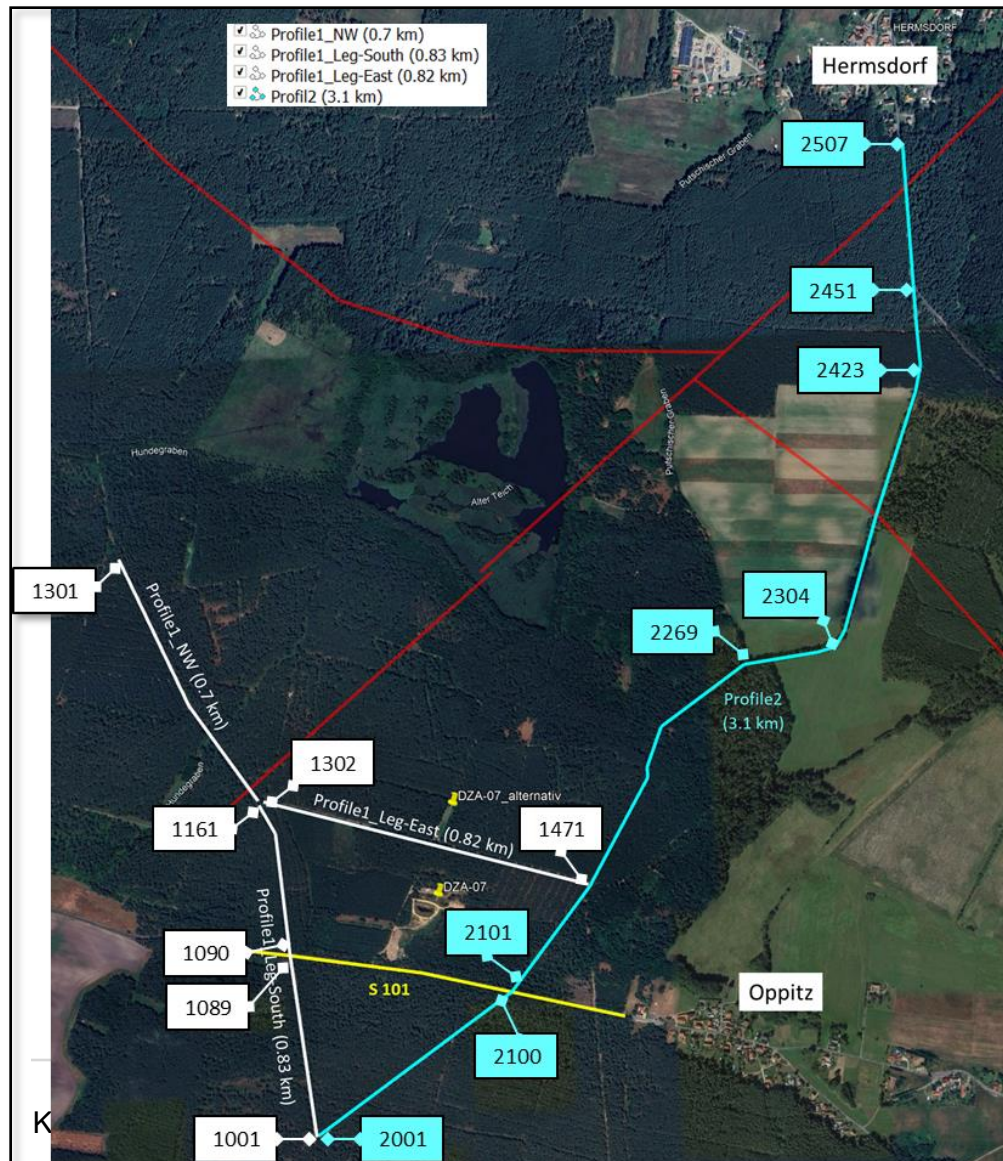






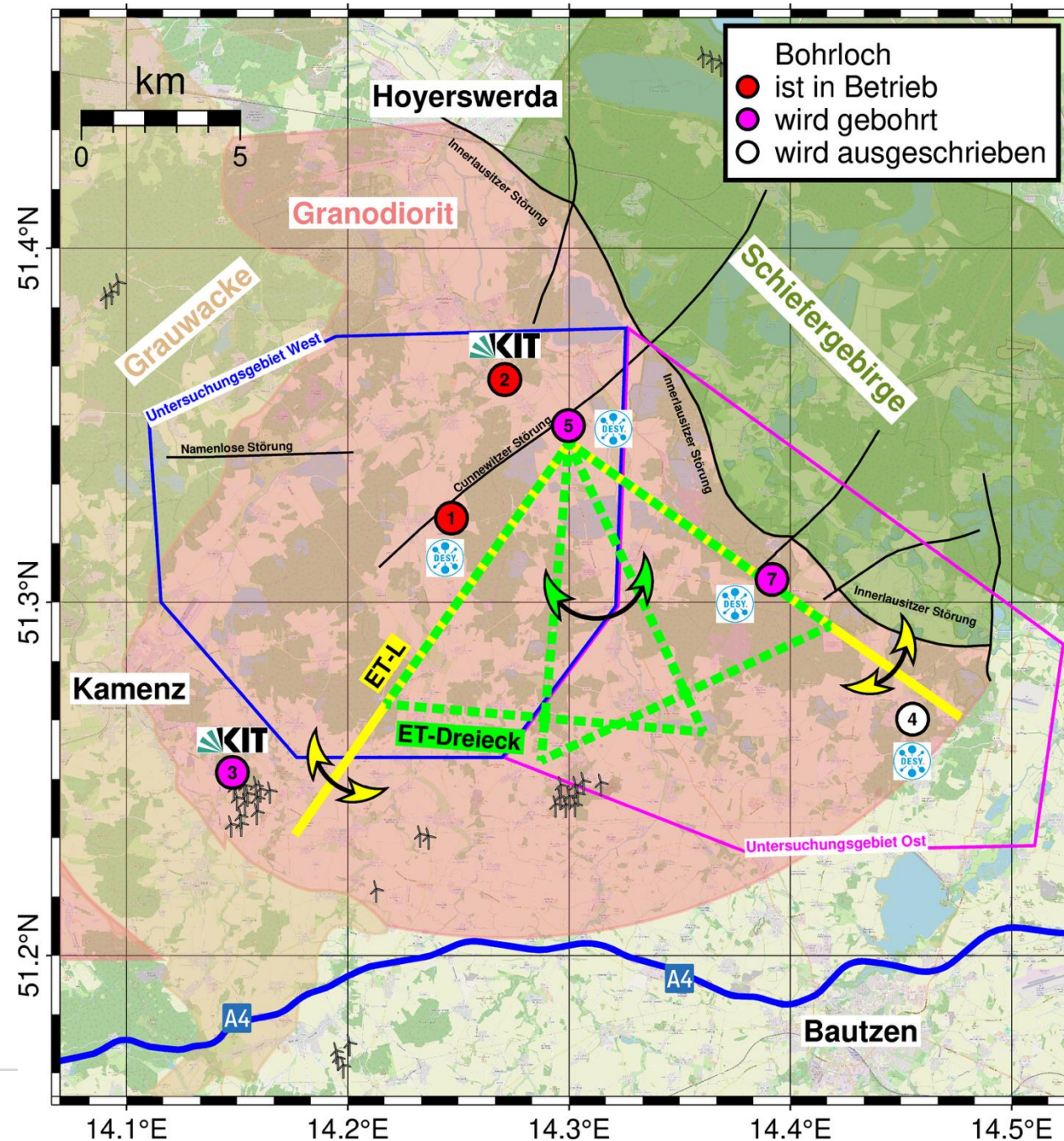


# Oppitz: P Wave Survey, design





# Possible layouts

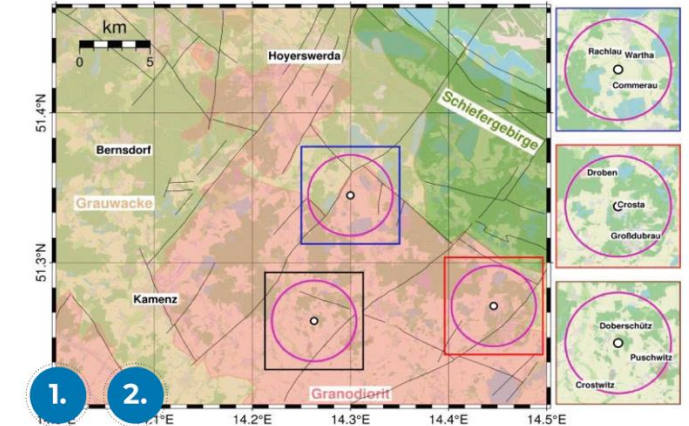


# Feasibility study LSL – Construction of an Underground Laboratory in the Granite of Lusatia

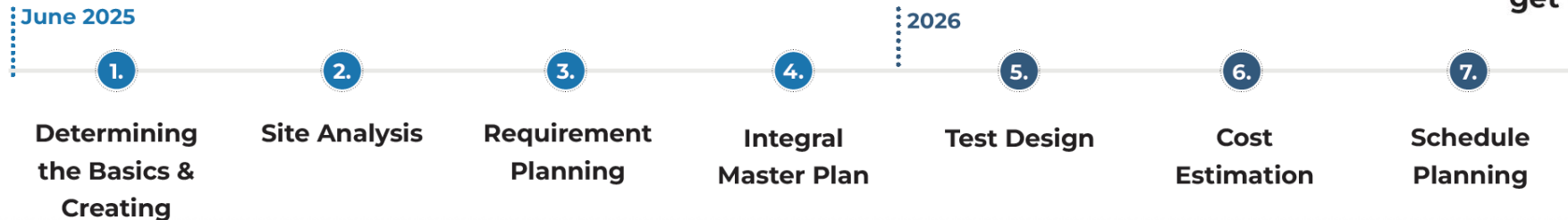
The DZA is investigating the construction of a Low Seismic Laboratory (LSL) in the granite massif of Lusatia. The aim is to create an extremely low-vibration research environment for gravitational wave physics, electron microscopy, and lithography.

DIETER WENNER (AMBERG), ANDREAS SCHOLZE (DZA)

As a first planning step, a feasibility study is to be prepared, in which the project objectives and necessary processes are defined in advance, scientific, geological, economic, and environmental aspects must be considered and defined in an integrated concept. AMBERG ENGINEERING GmbH (AE) was selected on the basis of the three agreed award criteria (total price, personal qualifications, references, and the technical concept). The contract with AE was signed at the end of May 2025.



**determining the basics & creating target images and site analysis**



# Timeline and (inter)dependencies

