

## EPOS Thematic Core Service Anthropogenic Hazards Research Infrastructure - governance and communication

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**E**UROPEAN**P**LATE**O**BSERVING**S**YSTEM

stitute of Geophysics

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Thematic Core Service Anthropogenic Hazards is one of the ten solid Earth science communities - specific services of the European Plate Observing System (EPOS) program.

Thematic Core Service Anthropogenic Hazards mission is to integrate - within EPOS - the research infrastructures related to studies of geohazards of anthropogenic origin, in particular those caused by the exploration and exploitation of georesources.

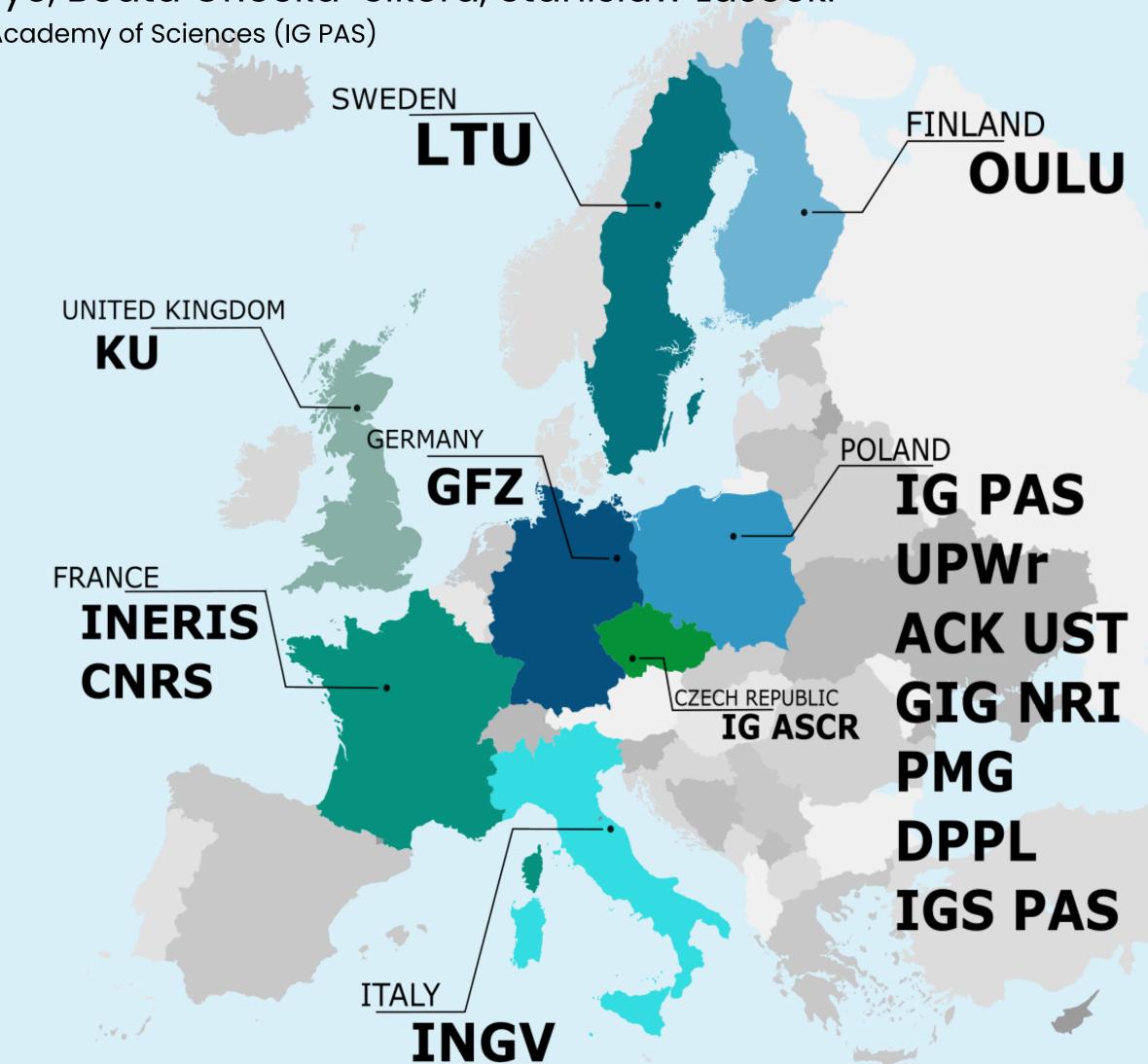
The exploitation of georesources entails significant risks and changes to the environment. To enhance the understanding and mitigation of these hazards, the TCS AH operates through the EPISODES Platform (episodesplatform.eu), a comprehensive e-research digital environment and workspace that connects international data nodes and provides open access to multidisciplinary datasets, termed "episodes", software, applications and computational resources for advanced analysis and visualization.

## TCS AH Consortium is supported by three external Experts Committees:

Innovation Advisory Committee

• Data Provider Committee

User Committee





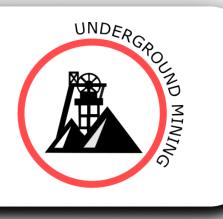
Episodes encompass critical data related to various subsurface activities, such as CO2 sequestration, hydrocarbon extraction, geothermal energy production, and more.

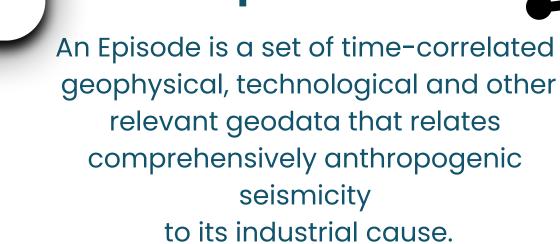




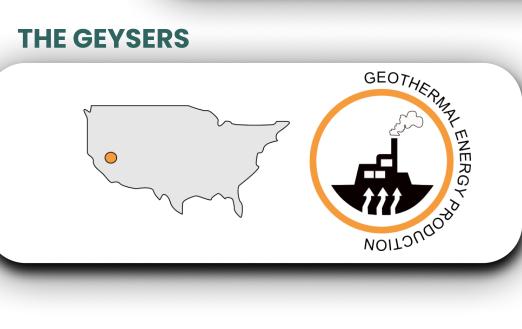
**BOBREK MINE** 

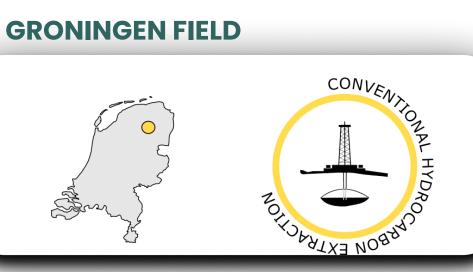






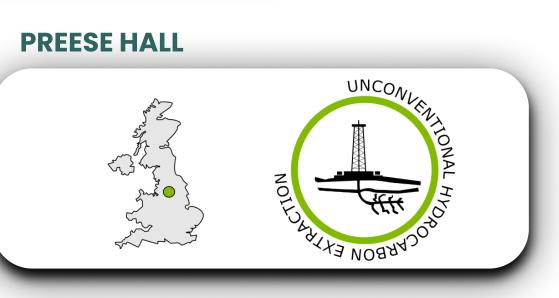
**Episodes** 













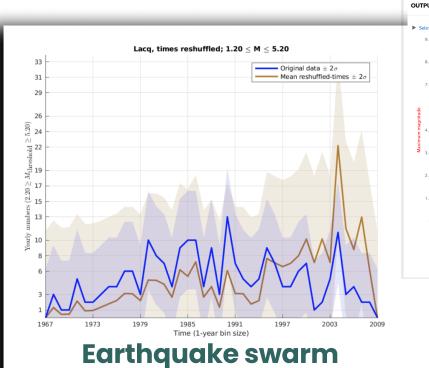
**Worldwide Episodes Map** 

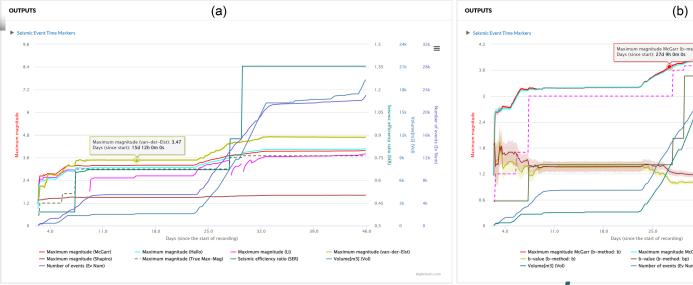
## **BRAZIL UFRN**

The EPISODES platform not only facilitates experimental research in a virtual laboratory but also promotes interdisciplinary collaboration among scientists, industry partners, and the community. It offers functionalities for data integration, visualization, and analysis, addressing correlations between technological activities and induced seismic responses.

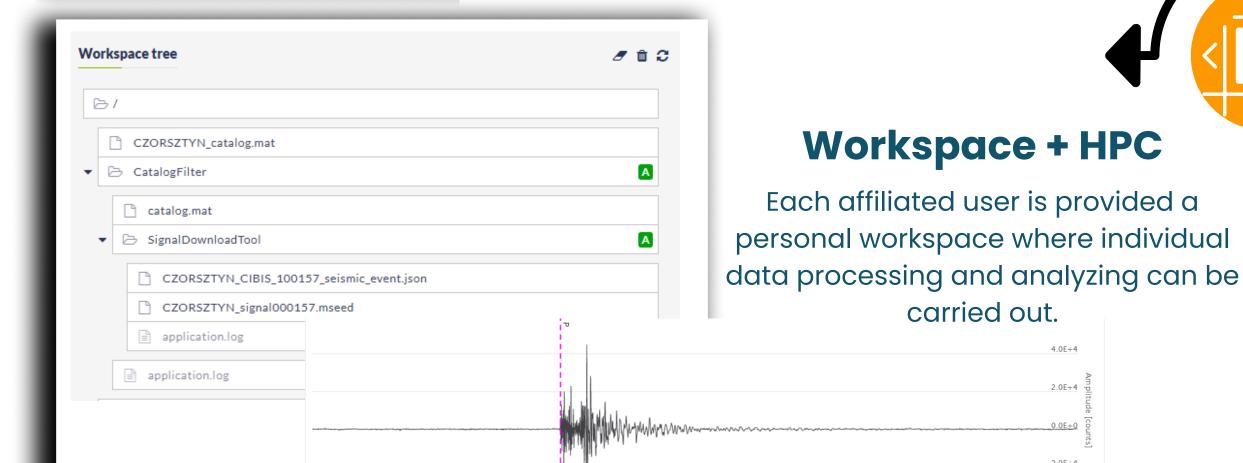


Applications are software tools to process and analyze the data. They help to relate seismicity and technological factors for hazard assessment and other scientific targets.



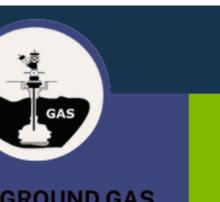


Maximum Magnitude Deterministic/Probabilistic Models

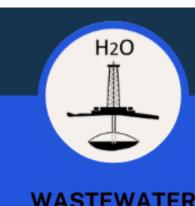








**EXTRACTION** 



INJECTION

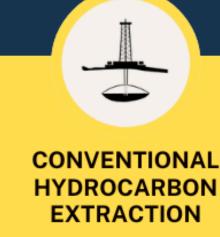


**FLUID INJECTION** 





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**CO2 SEQUESTRATION** 





**HYDROCARBON** 

As TCS AH continues to develop its infrastructure and expand data centers, it aims to strengthen global

research capabilities, enhance public understanding of anthropogenic hazards, and facilitate the transfer of

expert knowledge between industry and academia. Through these initiatives, TCS AH strives to drive

innovation and contribute to the effective management of risks associated with georesource exploitation.



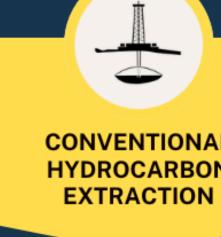




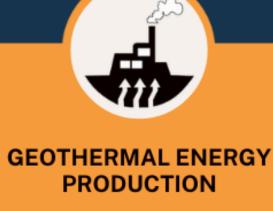
**IMPOUNDMENT** 



**EXPERIMENT** 



**HYDROCARBON** 



- Spectrum: KACW

Fitted spectrum: MAN

- Spectrum: STOD Fitted spectrum: STOD

Spectral analysis

**Social Media** 







