



## **THE EGER RIFT ICDP: AN OBSERVATORY FOR STUDY OF NON-VOLCANIC, MID-CRUSTAL EARTHQUAKE SWARMS AND ACCOMPANYING PHENOMENA**

Torsten DAHM<sup>1</sup>, Pavla Hrubcová<sup>2</sup>, Tomas Fischer<sup>3</sup>, Josef Horálek<sup>2</sup>, Michael Korn<sup>4</sup>, Stefan Buske<sup>5</sup> and Dirk Wagner<sup>1</sup>

The Eger Rift as active element of the European Cenozoic Rift System is located in the western Bohemian Massif and its south-western termination encompasses the West Bohemia/Vogtland region. For centuries, West Bohemia (Czech Republic) and Vogtland (Germany) have faced earthquake swarm seismicity and large-scale diffuse degassing of mantle-derived CO<sub>2</sub>.

The scientific term “earthquake swarm” (ES) describes the intensive, long lasting, low magnitude seismicity felt by the population. ES have been recognized in many regions worldwide under different tectonic and volcanic settings (e.g., Aquila 2009). Their mechanism, however, is still enigmatic and not understood. Nowadays, it is well accepted that ES are driven by fluid instability in the crust. These may be magmatic fluids for ES at volcanoes, or cold/meteoritic fluids in other regions, or mantle-derived fluids passing the brittle-ductile barrier through deep rooting faults. In West Bohemia/Vogtland, it is still unknown whether magma, water, CO<sub>2</sub> or other mantle-derived fluids are driving the persistent ES activity at mid-crustal levels at several locations. Since the region is known for its increased geodynamic activity, numerous mineral springs, Tertiary/Quaternary volcanism and neotectonic crustal movements, it is likely that all these phenomena are related to a common origin.

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<sup>1</sup> GFZ German Research Centre for Geosciences, Potsdam, Germany, [dahm@gfz-potsdam.de](mailto:dahm@gfz-potsdam.de)

<sup>2</sup> Institute of Geophysics, Academy of Science, Czech Republic

<sup>3</sup> Faculty of Science, Charles University, Czech Republic

<sup>4</sup> Institut für Geophysik und Geologie, Universität Leipzig, Germany

<sup>5</sup> Institute of Geophysics and Geoinformatics, TU Bergakademie Freiberg