



High radon medicinal springs in the west Bohemian / Vogtland earthquake area: A new findings and springs relationship to tectonic situation

Viktor Golias (1), Stepanka Turnova (1), and Veronika Kopackova (2)

(1) Charles University, Faculty of Science, Department of Geochemistry, Mineralogy and Mineral Resources, Praha, Czech Republic (wiki@natur.cuni.cz), (2) Czech Geological Survey, Klárov 131/3, Prague 1, Czech Republic

The territory of Western Bohemia is known for its persistent earthquake activity, accompanied by many mineral water springs and CO₂ outgassing. The main quake is the area around the Nový Kostel in the tertiary Cheb basin. The western environs of the basin are formed by Smrčiny / Fichtelgebirge granite, where there are radioactive springs. The most important source is the Wettingquelle spring in the Bad Brambach Spa, with an activity of up to 29 kBq/L of ²²²Rn. A number of new sources of radioactive water were found during the new field exploration program launched in 2016. Up to now, 40 springs with an activity greater than 1.5 kBq/L have been found, of which 9 sources with an activity higher than 5 kBq/L of ²²²Rn. The most remarkable discovery is the find of Břetislav spring south of Plesná town, with an activity 13.2 kBq/L of ²²²Rn and a flow rate of 2.5 L/min. The tectonic position of springs was unclear. Therefore, a remote sensing method was applied and the tectonic situation was determined by satellite imagery analysis. Correlation of radioactive springs positions and faults with NNW and NE directions was found.