



Earthquake swarms - comparison between West Bohemia and southwest Iceland

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Earthquake swarm is a specific type of seismic activity during which the deformation energy is released subsequently, in a huge number of weak earthquakes that are clustered in space and time. They occur mainly in volcanic areas. Earthquake swarms without active volcanism are less common and occur mainly in the areas of enhanced crustal fluid activity. One such area is the West Bohemia/Vogtland region (WB) in the Central Europe where the activity has typical intraplate character. The second region of our interest is southwest Iceland (SWI) where some of the worldwide most intensive swarms are observed. This region is located on the Mid-Atlantic Ridge where two tectonic plates are drawing apart so the activity has an interplate character. Despite the different geological setting and evolution of both areas the driving physical processes and triggering mechanisms are assumed to be similar and closely connected to the crustal fluids inherency. Even though the earthquake rate in SWI is about ten times higher, and the maximum magnitudes of swarms one level higher than in WB, we attempt to compare specific swarms which are similar in size and time span. The statistical analysis is based on the relatively located catalogues of earthquakes recorded during the last twenty years of continuous monitoring of both areas. As regards the WB, we focus particularly on a large $ML_{max} = 3.8$ swarm of 2008, the catalog of which comprises approximately 20.000 events with the magnitude of completeness $ML_c = 0.5$. As for the SWI, we aim above all at three swarms: Hengill of 1997, South of Hengill of 1998 and Krisuvik of 2003. The basic statistical characteristics as magnitude-frequency distribution, interevent-time distribution and space-time evolution are used for determining the swarm characteristics that are independent or vice-versa dependent on the tectonic environment.