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# Space-Time Distribution of microearthquake Activity near Nový Kostel of West Bohemia/Vogtland (central Europe) after the Year-2000 Swarm

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The NW Bohemia/Vogtland region of the Bohemian Massif is characteristic in a frequent reoccurrence of earthquake and micro-earthquake swarms. Most activity is concentrated near Nový Kostel where all the large, $M_L$ >3.0, swarms of the past 20 years took place. We observe a significant decrease of seismic activity after the latest large swarm in 2000 as only small, $M_L$ <1.5, micro-earthquake swarms occured there. We used a relative location method to relate the hypocenter positions of the post-swarm (2001 – 2006) activity to the geometry of the 2000-swarm cluster. We employed the method of cluster analysis of the hypocenter positions to obtain an integrated pattern of the space and time distribution of seismic energy release in the Nový Kostel focal zone for the period 1991 to 2006. We found that the activity has concentrated in several clusters which have been periodically reactivated. Some clusters coincide with the position of the previous activity (swarms 1994 and 1997 and the first subswarm of the 2000 swarm). The others have activated so far inactive, deep segments of the Nový Kostel fault. The existing concept of a shallow brittle-ductile transition in this central part of the seismoactive region has thus to be redrawn. We also determined focal mechanisms of selected events to check their consistency with the focal mechanisms of previous activity and to delineate the active fault planes of the newly activated clusters.

The temporal distribution of activity indicates that three periods can be delineated. While the year 2001 was characterized by dying out of the 2000 swarm in the form of a few microswarms, almost no seismicity occurred in the period 2002 – 2003. Subsequently, periodically repeating microearthquake swarms emerging since 2004 indicate a new demonstration of seismic energy release. Nevertheless, in spite of a relatively

large number of events, the seismic energy of this activity is negligible compared to the energy released during a large swarm, similar to that of year 2000.