



Vibration Effect of Near Earthquakes at Different Depths in a Shallow Medieval Mine

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Abstract

The shallow medieval Jeroným Mine is located at a distance of about 25 km southeast of the Nový Kostel focal zone where the most intensive seismic activity in West Bohemia (Czech Republic) has been documented. Permanent seismological monitoring has been carried out since 2004 in this mine. During the 2011 and 2014 seismic swarms, more than 1000 triggered records comprising almost 1500 earthquakes were recorded at the permanent station in the mine. Three short-term seismological experiments were accomplished during these swarms. Several temporary seismic stations were simultaneously placed in different parts of underground spaces which enabled comparison of vibration effect caused by near earthquakes in different parts of the mine. Although the depth of the lowest parts of mine is only about 60 m, a vibration effect generated by earthquakes from the Nový Kostel focal zone is not the same for the whole underground complex.

Key words: Jeroným mine, vibration, earthquake, seismic swarm, underground space.