



Tectonic and induced seismicity in the region of Mirovo salt deposit, NE Bulgaria

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Mirovo salt deposit is situated in NE Bulgaria. The mine has been exploited since 1956. Since 1980 several moderate earthquakes ($M > 4.0$) occurred in this region. Local seismological network around the salt body is deployed to monitor the seismicity in the region. A specific velocity model is used in the data processing to improve accuracy of hypocentral estimations. An analysis of seismic activity in the region close to the salt deposit is presented. The results obtained show that network configuration and the numbers of stations allow detection of low magnitude ($M < 1$) seismic events. The implementation of the new velocity model has improved the localization accuracy. The earthquakes are distributed in southern and western direction from the salt dome and some events occur within the salt body. The magnitude estimations vary from 0.7 to 2.1. There are some events with magnitude above $M = 3$. For more accurate hypocentral locations the double difference algorithm HypoDD is applied over the data catalog. We observed migration of the hypocenters in NE direction closer to the salt body. The seismic activity in the region of the salt body could have tectonic nature as well as might be a consequence of the salt deposit exploitation.