HILAR!S»

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Abstract

 $G_{eo\text{-hazards}}$ related to long-term stability of a deep hardrock underground mined out area is still a major challenge for human settlements, especially for a mine with a long mining history and mining induced seismicity. Attention needs to be drawn towards the risks associated with mined out sites which are no longer active and closed. One of the major difficulties with abandoned mines is that, it becomes difficult to conduct direct investigations, to quantify the geo-risks associated with the mined out voids on complete closure due to stability issues and ingress of water. There seems to be no particular guidelines or a proper procedure laid out to assess the seismicity of an abandoned mine and the long term risks associated with it. In this study, mining induced seismicity has been studied at mined out areas of Kolar Gold Fields in India. located in Kolar district of Karnataka, aimed to assess the local seismicity with a view to gain better understanding of the pattern of occurrence and the reason for recent post-mining occurrences such as sinkhole formations and subsidence events. Seismic data was acquired between the period May 2017 and May 2018, using five triaxial surface geophone sensors installed covering the entire stretch of the mining region. This five station seismic monitoring network was very useful in identifying seismic events with their hypocentres within 1000m depth from the surface. The data was processed with SEISAN (data processing software) and InSite-Geo (data analysis – 2D and 3D).

Biography:

Praveena Das Jennifer is a Civil engineer, with a Master's degree in Civil Engineering. She has worked in Rock Fracture Mechanics Laboratory and was associated with Geotechnical Investigation Projects. She has carried out several Soil Investigation studies for various mines. She has been involved in seismological data processing and analysis (seismic events like earthquakes- regional and distant) and is currently carrying out research work on seismic hazard due to shallow seismic events and their impacts to surface structures.

Speaker Publications:

1. "mining induced seismicity has been studied at mined out areas of Kolar Gold Fields in India".

2. "Seismic Hazard Assessment based on induced seismicity in underground mines: a comparative review of approach to hazard quantification".

3. "Controlling Seismic Hazard and Sustainable Development of Deep Mines (v.2)".

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