

ABSTRACT

The paper presents fundamental issues concerning the interaction of powered roof support with the rock mass in the area of the seam fault in the aspect of ensuring longwall excavation stability by utilizing pressure monitoring in the under-piston spaces of the legs of support. A synthetic presentation of methods for recognizing geological disturbances as well as practical experiences regarding prevention and methods of removing the effects of roof falls was conducted. The paper contains developed principles for proceeding the longwall face through a seam fault.

After describing the state of knowledge in the field of thesis the mining and geological conditions of considered longwalls and methodology of the research was presented. Afterwards the outcomes from data analysis of powered roof support monitoring systems from 7 longwalls, which were mining through the seam faults, were introduced. Longwalls where the research were carried were conducting the exploitation coal seams of the łaziski, orzeski, rudzki, and siodłowy formations in Upper Silesia Coal Basin. Subsequently the rules of ensuring stability of longwall workings in area of seam faults were established. Eventually doctoral thesis is ended by summarization and conclusion.