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Comparison of the results of seismic profiling method and WAS-96/RMS seismoacoustic active method in condition of exploitation edge influence

Abstract

In this work a comparison analysis is presented between the results of seismic profiling method and active seismoacoustic method (WAS-96/RMS). The methods were used to assess the influence of overlying coal seam edge on the stress state in the geological and mining condition of hard coal mine “Rydułtowy-Anna”.

The survey was conducted in the heading 3-E-E1 of 713/1-2 coal seam. The heading was situated below two exploitation edges of the 703/1 and 706 coal seams.

According to seismic profiling results the values of P-wave velocity are relatively greater compared to the values of theoretical velocity in the coal seam. The maximum values of the P-wave velocity were located directly below the exploitation edge of 706 coal seam.

The results of WAS-96/RMS method showed the weak and the medium influence of the exploitation edge on the 3-E-E1. The maximum values of the seismoacoustic surveys correlate well with the maximum values of seismic profiling results.