

A method of detecting and reducing methane hazard in the longwall area is characterized in that the regions of stress (N) concentration are periodically localized on the longwall panel length by a passive velocity tomography using seismometers (8) and low-frequency geophones (9). These data are compared with current seismoacoustic measurements localizing places (M) of groups of crashes accompanying cracking of the rock mass in the longwall panel length, with measurements of methane concentration and the air flow in the working. The places of stress (N) concentration in front of the longwall are additionally localized with an active attenuation-damping tomography taking into account a shearer (13) position relative to the working (B). Then, these variables are correlated in time and space, and after finding that the correlation coefficient exceeds predetermined critical value, preventive procedures to minimize methane hazard are initiated. In the measurement system the seismic recording system (1), methanometric system (3), executive system (6), and warning module (7) are connected to the microprocessor analytical system (5). The seismic recording system (1) with attached at least four seismometers (8), at least four low-frequency geophones (9) and at least two strain sensors (10), is connected to the seismoacoustic recording system (2) with at least four geophones (11), and to the position and operation control system (4) of the shearer (13) with a shearer position sensor (12).