

Application of Integrated Geophysics Method for Detecting Collapse Column in Some Coal Mines

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Abstract We propose integrated three-point and three-electrode sounding method, three electrode sounding depth method and transient electromagnetic method to detect collapse column. According to actual conditions in some coal mine, three-point and three-electrode sounding method, three electrode sounding depth method and transient electromagnetic method were employed to detect collapse column. On the basis of integrated geophysics, we reached major conclusions as following: the boundary of collapse column is between detecting number 7 to number 8 in the roadway; there is no water in the collapse column, there is some fissure water in the boundary of collapse column; detecting results and exposure during excavation fitted together nearly. Detecting results show that three-point-three-electrode sounding method, three electrode sounding depth method and transient electromagnetic method complemented and verified each other. The integrated geophysics method could confirm the boundary of collapse column and whether there contains water or not. It is very helpful for the future work.

Keywords integrated geophysics method, collapse column, three electrode sounding, transient electromagnetic method