

论文

特厚煤层大采高综放开采机采高度的确定与影响

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摘要:

为了确定大采高综放开采合理的机采高度, 基于理论分析与数值模拟计算方法, 研究了不同机采高度对支架工作阻力、顶煤冒放规律、煤壁稳定性的影响。研究表明: 大采高综放开采机采高度的确定应充分考虑采放比、煤壁稳定性、矿压显现、顶煤采出率及设备投资等。支架所需支护强度、顶煤采出率、煤壁片帮程度与机采高度成正比相关性, 但并不是简单的线性关系。由于受顶煤赋存条件及采出率等因素影响, 相同采高大采高综放开采煤壁片帮几率要高于大采高综采。大采高综放开采是煤炭开采技术的新突破, 是实现特厚煤层安全高效开采的有效途径。

关键词: 大采高综放; 机采高度; 顶煤运移规律; 采出率; 煤壁片帮

Determination and influence of cutting height of coal by top coal caving method with great mining height in extra thick coal seam

Abstract:

In order to determine the cutting height of coal on top caving with great mining height, the influence of different cutting height on the support working resistance, the top-coal caving rules and the coal wall stability were studied based on theoretical analysis and numerical simulation method. The results show that the ratio of mining height to caving height, coal wall stability, mine pressure appeared, top coal recovery rate and equipment investment should be fully considered to determine the cutting height. The support requires strength, top coal recovery rate, coal wall spalling positively correlate with the cutting height, which is not a linear relation. Due to the influence of top coal geological conditions and recovery rate, the rate of coal wall spalling in top coal caving with great mining height is larger than large mining height fully-mechanized in the condition of the same cutting height. The top coal caving with great mining height is a breakthrough, and is a new effective way to achieve safe and efficient mining in extra thick coal seam.

Keywords: top coal caving with great mining height, cutting height, top coal migration rule, rate of recovery, coal wall spalling.

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