

论文

应力状态对煤巷顶板锚固孔钻进速度的影响

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摘要:

采用有限元数值软件对煤巷顶板常见岩石在不同应力状态下模拟钻进, 发现应力状态对煤巷顶板岩石锚固孔的钻进速度影响不明显。从钻进位移和实时钻进速度两方面对煤巷顶板不同类型岩石钻进结果进行分析讨论, 认为平均钻进速度可作为衡量岩石类型的一个较好指标。通过各类岩石瞬时钻进速度的分析, 钻头的回弹是不同岩石力学特性的反应, 可通过对回弹次数、正面积和负面积等参数对不同岩层进行识别。

关键词: 煤巷顶板锚固孔; 钻进速度; 应力状态

Influence of stress states on drilling velocity of anchorage hole on coal roadway roof

Abstract:

The paper used finite element software to simulate drilling of common rocks in coal roadway roof under different stress states, and got different stress states on roadway roof rock have no obvious impact on anchor hole drilling velocity. From two aspects including drilling displacement and real time velocity, drilling results of various rocks in coal roadway roof were analyzed and discussed, meanwhile the conclusion that average drilling velocity can be considered as a good index to measure the type of rock is got. Through analyzing instantaneous drilling velocity of various rocks, it is obtained that the resilience of bore bit may react different rock mechanics characteristics, various rocks can be identified by different parameters such as resilience frequency, positive area, negative area and so on.

Keywords: anchorage hole on coal roadway roof; drilling velocity; stress states

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