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论文

# 基载比对薄基岩厚表土煤层工作面矿压的影响

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摘要：

为研究薄基岩厚表土煤层工作面矿压显现规律，以李家豪煤矿为背景，对工作面基本顶结构进行了稳定性分析，并运用数值模拟软件UDEC对工作面在不同基载比条件下的矿压显现规律进行分析，结合工作面现场实测数据，分别提出依据岩块块度i和基载比判断工作面基本顶结构的稳定性。分析认为，基本顶初次破断后岩块的三铰拱结构及触矸后的单斜结构在煤壁处发生滑落失稳区域的块度范围为0.40≤i≤1.57；基载比小于0.9时，覆岩在初次来压与周期来压时易发生滑落失稳现象；薄基岩厚表土煤层关键层出现滑动失稳破坏，工作面来压时对于煤壁前方的应力影响区域不大；薄基岩厚表土煤层工作面来压时主要特征为顶板沿煤壁切落，形成台阶下沉，工作面支架动载明显。

关键词： 基载比；薄基岩；矿压；稳定性

## Influence of ratio of basement and loadings on mining face rock pressure in thin basement rock thick surface soil

Abstract:

For studying the regularity of strata behavior in mining face in thin bedrock with thick surface soil，the stability of structure of main roof were analyzed based on Lijiahao Coal Mine，and numerical simulation software UDEC was used to analyze the regularity of strata behavior in mining face under different ratio of rock and loadings，combined with field measurement of mining coal，block degree of rock i and ratio of rock and loadings were separately put forward to judge the stability of structure of main roof.It was considered analysis that the three hinge arch structures formed after main roof breaking and the monoclinic structure formed after contacting waste rock of main roof will occur sliding instability when the block degree of rock i is more than 0.40 and less than 1.57；overburden also takes place sliding instability phenomenon easily when first weighting or periodic weighting of the main roof comes；key strata represents sliding instability in thin bedrock with thick surface soil，while it is not large of the ground pressure of regional in front of coal wall when the roof weighting comes；during the roof weighting coming，the regularity of strata behavior in thin bedrock with thick surface soil is that main roof cuts and splits along the coal wall，and emerges roof steps，the dynamic load action on face shield comes obviously.

Keywords: ratio of basement and loadings；thin basement rock；rock pressure；stability

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