



## 论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.40 No.5 Oct.2009

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文章编号: 1672-7207(2009)05-1423-07

### 急倾斜矿体开采岩体移动规律与变形机理

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**摘要:** 为了研究急倾斜矿体开采的岩移规律与变形机理, 采用数值模拟的方法, 对急倾斜矿体在高构造应力和自重应力2种条件下的岩移特征进行对比分析。研究表明: 当开采区在竖直方向上的高度远小于矿体在水平方向上的长度时, 在这2种应力条件下都具有类似水平矿体开采的地表岩移特征; 反之, 在高构造应力条件下, 急倾斜矿体开采地表出现双沉降中心的现象, 而在自重应力条件下只存在单沉降中心; 在高构造应力条件下, 急倾斜矿体开采在地表移动变形量、移动变形影响区规模及地表宏观变形破坏特征上与自重应力条件下相比都有较大差异, 原岩应力场中作为特征量的最大主压应力的取向对岩移行为的影响是产生这差异的根本原因。

**关键字:** 高构造应力; 自重应力; 急倾斜矿体; 地表移动; 变形机理

### Law of ground movement and its deformation mechanism induced by mining steep deposit

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**Abstract:** Based on numerical simulation, the ground movement laws and deformation mechanism were studied at mining steep deposits in high tectonic stress area and in gravity stress area. The results show that, when the vertical size of the mining areas is smaller than the horizontal size of the orebody, no matter mining is in gravity stress area or in high tectonic stress area, they have similar features of ground movement with mining horizontal orebody; contrarily, there appear double settlement centers on the ground surface under the condition of mining in high tectonic stress area, while there is always a single center under the other condition. Meanwhile the ground movement lever, scale of mining influence area and macro features of ground movement, deformation and fracture are also different from mining in gravity stress area. The fundamental reason consists in the impact of orientation of the maximum principal stress on rock movement features in in-site rock stress field.

**Key words:** high tectonic stress; gravity stress; steep deposit; ground movement; deformation mechanism

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