

Kinematic analysis of blocks in tunnel on the basis of discontinuities.

ABSTRACT

This paper demonstrates the advantages of using stereographic projections in kinematic analysis of rock blocks in excavation surface. The stereographic method is completed by planes and poles as points and lines on the horizontal surface and the block kinematic behavioral analysis is investigated in a rock free face subsequently. A block is considered to be an instable one when the intersection lines fall into the critical zone, this area is defined through the relationship between the friction angle of the stone mass and the slope of the free face respectively. It is possible to determine the movement of the blocks on the basis of the discontinuity position before any collapse or sliding happens.

Keyword: Stereographic method; Free face; Dip & Dip direction; Friction angel; Discontinuity; Intersection.