

## **SENSITIVITY ANALYSIS OF SURROUNDING ROCK STABILITY PARAMETERS OF THICK FAULT UNDERGROUND CAVERNS**

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### **ABSTRACT**

Study on parameter sensitivity of underground cavern surrounding rock stability, can be used for stability evaluation of underground cavern to provide a basis. Based on the nonlinear elastoplastic theory, we established a three-dimensional finite element model for underground powerhouse. We investigate the influence of changes in mechanical parameters on surrounding rock stability of underground caverns with thick faults by changing the elastic modulus, cohesion and the friction angle of rock mass and structural surface. Results show that the most influential to the deformation of the cavern group is the elastic modulus of the rock mass, and the least affected is the  $c$  and  $\phi$  value of the structural plane. The most influential factors on the stress distribution of the cavern group are the  $c$  and  $\phi$  values of the rock mass, and the least affected is the elastic modulus of the structural plane.

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