عنوان مقاله:

Slope Stability Analysis Methods

محل انتشار:

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خلاصه مقاله:

The presence of discontinuities, the inherent variability of the rock mass and discontinuity properties, and the uncertainties associated with directions and magnitudes of the in-situstress makes the rock engineering problems challenging. The numerical modeling can assist the ground control engineers in designing and evaluating the stability of the excavations. If extensive geological and geotechnical data are available, then detailed predictions of deformation, stress and stability can be accomplished by performing numerical modeling. If not, still the numerical modeling can be used to perform parametric studies to gain insight into the possible ranges of responses of a system due to likely ranges of various parameters. The parametric studies can help to identify the key parameters and their impact on stability of underground excavations. The priorities of the material testing and site investigation can be set based on the selected key parameters from parametric studies. The most important modeling methods in stability analysis include finite element method, finite difference method, boundary element method and Distinct element method, which are used in three static, quasi-static and dynamic conditions and in both definite and probability modes. In this report, we investigate each of these methods their weaknesses and strengths.

کلمات کلیدی:

modeling methods, stability analysis, finite element method, finite difference method, boundary element method, Distinct element method.

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