عنوان مقاله:

Experimental and Numerical study of earth slope reinforcement using ordinary and rigid stone columns

محل انتشار:

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خلاصه مقاله:

Earth slopes stabilization is one of the main issues focused on by are in geotechnical engineer. Use of stone columns is one of approaches well increasing the safety factor of earth slopes of the soil embankments; furthermore, it is economical besides the simplicity and ease it exhibits in implementation. . The present paper aims at an experimental comparison of the Ordinary Stone Column (OSC) and Rigid Stone Column (RSC) behaviors in sandy slope. These tasks were carried out by constructing embankment sandy slope and, then, saturating it with rain and, finally, loading increment. The experimental results, obtained in laboratory modeling through taking advantage of three-dimensional finite difference method, have also been verified. Laboratory modeling and numerical analyses results have shown that the existence of rigid stone column in the middle of slope (as the optimal placement location) enhances sandy slope stability up to 1.36 times compared with slope reinforced by ordinary stone columns.

کلمات کلیدی:

Earth Slopes, Ordinary Stone Column, Rigid Stone Column, Stability