عنوان مقاله:

Effect of Weak Layer on Seismic Stability of Anchor-Reinforced Slopes

محل انتشار:

فصلنامه زلزله شناسی و مهندسی زلزله, دوره 19, شماره 3 (سال: 1396)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

In this paper, permanent displacement of anchor-reinforced slopes was studied numerically to investigate the effect of weak layer on the seismic stability. A variety of slopes with different height and reinforcing anchors were surveyed by employing three different methods: (۱) dynamic finite element, (۲) Newmark's sliding block and (۳) simplified analytical formula. The position and properties of the weak layer was determined by "Phi-C-Reduction" method. Several time-history analyses were performed for the selected slopes subjected to two devastating earthquakes (Tabas and Kocaeli) at different intensities. It was shown that when there is a weak layer in anchor-reinforced slopes, which are statically stable with reasonable safety factor, the anchors could not necessarily provide seismic stability for slopes in some intensity levels. Furthermore, considering average acceleration that may be amplified throughout the slope, the .resonance phenomenon was investigated

کلمات کلیدی:

Seismic stability, slope, Weak layer, Anchor, Permanent displacement