Abstract

The stability of slopes is a major concern in the field of geotechnical engineering. Usually two-dimensional analyses based on limit equilibrium methods are implemented in this field due to their simplicity and effectiveness. In this paper, the stability of model soil slopes for homogeneous and layered soil with and without earthquake has been analyzed and the related results have been reported. It is noted that the factor of safety decreases with the increase of horizontal seismic coefficient for both the slopes of homogeneous and layered soil. Horizontal seismic coefficient alone affects the stability of slope severely than the combined effect of horizontal and vertical seismic coefficients. The effect of slope angle and cohesion of soil on the stability of slopes have also been reported in this study. The factor of safety of slope increases with the increase of the ratios of cohesion of two soil layers ( is variable while is constant) up to a certain value and beyond that, the factor of safety remains constant.

Index Terms

Computer Science
Information Science

Keywords
Slope Stability  Seismic coefficients  Factor of Safety  Cohesion  LEM.