عنوان مقاله:

The effect of increasing the angle of incidence of earthquake on tunnel in the saturated ambience on surface structures subjected to near field earthquake

محل انتشار:

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خلاصه مقاله:

The experiences of the past earthquakes have been indicated that the surface structures were influenced by seismic waves according to the distance from fault focus after tunnel excavation. So the effects of near and far field earthquakes on the surface structures should be noted while underground tunnels are excavated. In this attempt, saturated conditions are considered surrounding the excavated tunnel and the finite element modeling were performed using Coulomb's failure equation. In addition the effect of increasing the angle of incidence of earthquake was determined in this paper. The obtained results of increasing the angle of incidence of earthquake on tunnel in the saturated ambience on surface structuresdemonstrate the structures in vicinity of tunnels were markedly damaged due to near field earthquakes in the saturated conditions and resonance phenomenon also was appeared. Furthermore statistical results show that surface structures in the saturated conditions have effected near field (earthquakes there is a significant difference between the obtained numerical results (p-value < 0.05

کلمات کلیدی:

Angle of earthquake, Tunnel, Saturated ambience