

عنوان مقاله:

Numerical simulation of soil deformation due to liquefaction using finite element method

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خلاصه مقاله:

Liquefaction of sandy soils during earthquakes is a cause for concern as it may lead to disastrous consequences, such as significant structural damage and loss of life. Considerable advances have been made in recent years in the area of numerical analysis of soil liquefaction. This phenomenon in soils subjected to dynamic loading has received considerable attention since the experiences in Japan and Alaska during the mid 1960s. In this paper, the behavior of sand due to earthquake-induced liquefaction by means of finite element method and the use of the two-surface constitutive model developed by Poorooshasb and Pietruszczak (1985) for numerical simulation. Then soil deformation is investigated during earthquake and after soil liquefaction. From the results of this model it can be seen that the major deformation of the soil without applying the overhead in the horizontal direction, the maximum is at ground level and continues deep in the nonlinear and descending direction, but the vertical deformation, which is very low, is only 2 meters. Earth's surface is observed. It is worth noting that such a model is valid to the soils without overload and prone to being liquefaction.

کلمات کلیدی:

liquefaction, Numerical simulation, Finite Element, Soil Deformation

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