

عنوان مقاله:

Discrete element simulations of assemblies of two-dimensional irregularly-shaped particles and effects of particles shape on mechanical behavior

محل انتشار:

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خلاصه مقاله:

Several researchers have investigated the effects of grain's shape on the physical behavior of granular materials. The results of researches show that grain's shape has considerable effects on the engineering properties of their assembly in granular soils. Therefore adequate grain shape modeling is quite important. A discrete element method has been developed to simulate assemblies of two-dimensional irregularlyshaped particles to study the mechanical behavior of granular materials. Each particle's shape is assumed to be represented by combining circular elements so that adequate particle shape modeling is obtained. The program DISC (Bathurst, 1985) which is a modified version of BALL Cundall, 1978) was adopted and modified to simulate assembly of particles which are represented according to above assumption. Then, series of biaxial tests are conducted on assemblies of particles with different shapes. The focus of this study is on effects of grain's shape on echanical behavior of simulated granular material. Results for .assemblies of angular grains and rounded grains are presented in terms of macro mechanical behavior

کلمات کلیدی:

Irregular grain shape, Discrete element simulation, Numerical modeling

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