

عنوان مقاله:

DEM Analysis of Backfilled Walls Subjected to Active Translation Mode

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خلاصه مقاله:

In this paper, the problem of a retaining wall under active translation mode is investigated numerically. To this end, a series of numerical models is conducted using the discrete element code, PFC2D. The backfill soil is simulated by an assembly of separate cohesionless circular particles. Backfill soil was prepared by pouring soil particles from a specific height under gravity force and giving them enough time for appropriate settlement. Different heights of retaining walls are simulated and the lateral earth pressure on the wall is observed under both at-rest and active conditions. Numerical results compared with predictions from some analytical methods and measurements from physical models. The active state of earth pressure is defined as the earth pressure distribution corresponding to the values of wall displacement where the failure zone in the backfill is fully developed. The numerical results showed that the fully active state of earth pressure occurred at a wall displacement corresponding to the strains required for reaching the critical state in biaxial compressive tests.

کلمات کلیدی:

Numerical analysis, Retaining walls, Lateral earth pressure, PFC2D

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