

عنوان مقاله:

Static and Pseudo-static Study of Stress and Displacement of Earth-Fill Dam Using Layered and Single-Layer Models

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خلاصه مقاله:

Earth-fill dams stability in steady state seepage condition is very important, especially during earthquakes. Numerical software analyses require accurate and realistic modeling of construction stages. Since earth-fill dams are constructed in different layers, so these conditions should be considered in software modeling to achieve a reasonable design. In this study, an earth-fill dam is modeled in PLAXIS software and the effects of the number and shape of layers are studied in dry and steady-state conditions. Obtained results in static and pseudo-static analyses show that modeling of earth-fill dams with different layers has significant effects on shear stresses and horizontal displacements. For example, horizontal displacements and shear stresses, increase at least 50% and 17% respectively, in comparison with single layer models. According to the obtained results, it can be mentioned that modeling of an earth-fill dam in the layered model and rather in inclined layers are more reasonable.

کلمات کلیدی:

Earth-Fill dam, Stress distribution, Displacement, Layered model, Pseudo-static analysis

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