Non-Linear Dynamic Analysis of Concrete Face Rockfill Dam

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Abstract

This study deals with the development and application of a two dimensional finite element software, to account the physical and material modeling of the concrete face rockfill dams.In the physical discretization the combination of finite-infinite and interface element was used. While the material non-linearity was also taken into consideration using Druker-Prager yield criteria. Finally the seismic response of a concrete face rockfill dams was carried out by the computer software developed in the course of this study.

First static stresses for the gravity loading has been evaluated and then the non-linear dynamic response of the dam carried out for the DBL earthquake record using direct integration of Newmark technique.The acceleration, deformation and stresses at same critical point in the body of the dam are discussed in the paper.

Keyword:

CFRD, Drucker-Prager, Dynamic, Joint element, Finite Element, Nonlinear

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