

## عنوان مقاله:

Investigation of to the Effect of Bedrock Stiffness on Seismic Behaviour of Roller Compacted Concrete Dam

## محل انتشار:

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## خلاصه مقاله:

In this research, the effect of bedrock stiffness on seismic performance of roller compacted concrete (RCC) dam is evaluated using probabilistic analysis. Due to the geometry and behavior of RCC dams, a two-dimensional modeling was selected for system. Ansys software is used for modeling and analysis of dam-reservoir- foundation system. Newmark implicit time integration scheme is developed to solve the time-discretized equations which are an unconditionally stable method. The Watana dam, due to San Fernando earthquake has been selected as a case study. In order to propagate the parametric sensitivity to the seismic performance of the system, Monte Carlo simulation with Latin hypercube sampling (LHS) method is used as a probabilistic method and uncertainty analysis. The sensitivity of responses under seismic loading is reliably examined utilizing different values of ratio of bedrock stiffness to body concrete stiffness as random inputs. Consider to obtained results, it is revealed that the bedrock stiffness how can effect on seismic behavior of concrete gravity dams due to earthquake. Regarding the safety of dams due to compressive stresses, various ways have been assessed to investigate the induced tensile stress in the heel and the results have been investigated. Finally, appropriate range of the ratio of bedrock stiffness to concrete stiffness of dam body is presented to assess the safety design.

## کلمات کلیدی:

Uncertainty; RCC Dam; Bedrock Stiffness; Latin Hypercube Sampling; Interaction

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/803932>

