

عنوان مقاله:

EVALUATION OF SEISMIC FRAGILITY CURVE OF A TYPICAL EMBANKMENT DAM

محل انتشار:

هشتمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1398)

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خلاصه مقاله:

Dam is an important part of infrastructures, the failure of which would lead to catastrophic effects on a regional scale in terms of loss of human lives and financial losses. Seismic fragility analysis is one of the most effective methods for evaluating the seismic performance of structures. The purpose of this study is to assess the seismic response of an embankment dam subjected to earthquakes and derive analytical fragility functions by using a numerical simulation procedure. Nevertheless, the time required to run a model, considering all of randomness and uncertainties, is prohibitive. Hence, for simplicity, only the variation of input ground motion is taken into account in this paper. Vertical deformation is obtained using 2D finite element elastodynamic analysis. In present work, a set of 20 realistic ground acceleration time histories based on the FEMA 695 far-field records were employed to present the variability in ground motion. The fragility parameters were obtained for minor damage limit state only and the semi-infinite environment is modeled using perfectly matched layers (PML) and dam-foundation interaction has been considered

کلمات کلیدی:

Fragility curve, perfectly matched layer, Embankment Dam-Foundation Interaction, Finite elements method

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