عنوان مقاله:

COMPARISON BETWEEN UNCERTAINTY MEARURES IN PROBABILISTIC ANALYSIS

محل انتشار:

پنجمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1386)

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نویسندگان:

M.SAYYAR - *Graduate Research Assistant, Dept. of Civil Engineering, Sharif University of Technology*

ZARFAM - *Graduate Research Assistant, Dept. of Civil Engineering, Sharif University of Technology*

MOFID - *Professor, Dept. of Civil Engineering, Sharif University of Technology*

خلاصه مقاله:

One of the most important current purposes of earthquake engineers is precisely predicting the behavior of the structures during future earthquakes. The limitation of our information about seismic parameters such as distance from the epicenter, frequency content and peak ground acceleration and also the uncertainty of the applied analytical methods caused the probability theory into the earthquake engineering. In this paper, the measure of seismic demand and capacity has been obtained, using a method based on an incremental non-linear dynamic analysis and statistical process of the results. The maximum inter story drift ratio has been used as the damage measure (DM) and spectral acceleration corresponding to the fundamental period of the structure defined as the intensity measure (IM).Because of uncertainty in calculating seismic demand and capacity, there would be some uncertainties in the results. This uncertainties can be measured by two uncertainty measures, uncertainty index and total uncertainty. In this research, four steel frames with 4, 8, 12 and 16 stories that are representative of structures with low to medium periods have been studied and the uncertainty index and total uncertainty have been calculated for each of them, using a number of records which were scaled in different levels of earthquake intensity. According to the obtained results, the uncertainty measures compared to each other.

کلمات کلیدی:

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