

عنوان مقاله:

HOW TO COMPARE THE SEISMIC PERFORMANCE OF STRUCTURES

محل انتشار:

هفتمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1394)

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خلاصه مقاله:

The process of structural design is based on the selection of the top alternative designs from a group of viable choices, ideally choosing the one that best satisfies the requirements. With the emergence of performance-based earthquake engineering, such comparisons now need to be performed on the basis of the seismic performance, preferably at several limit-states. Such a direct evaluation can become cumbersome, requiring seismic hazard information. Therefore, shortcuts and simpler techniques have been introduced that are generally based on the concept of system fragility, as estimated through the various methods of structural analysis. Still, there is no general consensus on the metrics that can be used for such an evaluation. To help with such assessments, we offer a discussion of the available choices for analysts that can employ nonlinear dynamic analysis methods. It is shown that having the complete description of limit-state fragility is sufficient for a reliable comparison, with few exceptions, while lesser information may lead to erroneous results.

کلمات کلیدی:

Seismic Performance, Nonlinear Analysis, Static, Dynamic, Capacity

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