عنوان مقاله:

Seismically Induced Overturning of Objects and Filtering Effects of Buildings

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خلاصه مقاله:

The seismic performance of unrestrained objects is critically dependent on the displacement demand behaviour of the building floor. The risk of an object overturning can be estimated from the dual independent criteria of object width and height, as opposed to the usual single criterion of the object aspect ratio (or slenderness ratio) based on static analysis. An object is at risk from overturning if the displacement demand of the floor exceeds one-third of the width of the object. According to floor amplification clauses in earthquake codes of practice, the filtering effects of a building amplify ground motions up its height. However, the building may also behave as an isolation medium, which attenuates the transmitted motions. These two perceptions seem contradictory. This paper aims to resolve this significant dilemma and hence contribute to improving the fundamental understanding of the dynamical processes of damage to building contents. Floor spectra of buildings, as presented in the paper, demonstrate both amplification .and isolation actions

کلمات کلیدی:

Non-structural Components, Building Contents, Overturning, Rocking, Displacement Floor Response Spectra