

عنوان مقاله:

COMPARING NONLINEAR TIME HISTOY AND NONLINEAR STATIC ANALYSIS OF RC STRUCTURES WITH VERTICALMASS IRRIGULARITY

محل انتشار:

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

تعداد صفحات اصل مقاله: 7

نویسندگان:

Mohammad Mehdi ERFANI - MSc. Graduated in structural engineering, University of Zanajn, Zanajn, Iran

Mahdi GORZIN - MSc. Graduated in structural engineering, University of Zanajn, Zanajn, Iran

Hossein TAJMIR RIAHI - Assistant professor, University of Isfahan, Isfahan, Iran

خلاصه مقاله:

Investigations on the past earthquakes proved that irregular buildings are vulnerable in accordance with regular ones. This paper investigates seismic behaviour of reinforced concrete buildings with mass irregularity. These irregularities are considered as three irregular regions in bottom, middle and upper levels along the frame height of the frames. It also discusses nonlinear static analysis results with different load patterns. Nonlinear time history analyses for these types of structures are also performed in this paper. This method is used for verifying the results obtained by nonlinear static analysis. In order to extend the results to cover more types of structural systems, both moment resisting frames and moment frames with shear walls are studied. Results of the present investigation have been shown that mass growth in a story which is subjected to mass irregularity leads to increase differences between the results obtained by nonlinear static pushover and nonlinear time history analysis. Also results show that uniform loading pattern in nonlinear static analysis method is not recommended for concrete buildings with vertical mass irregularity. Generally, differences between the two methods are less in frames equipped with shear walls in accordance with moment resisting frames.

کلمات کلیدی:

Irregularity, RC Structures, Seismic Behavior, Time History Analysis, Nonlinear Behavior

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1132535>

