

## **SEISMIC DEMANDS ASSESSMENT OF TALL BUILDINGS**

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### **ABSTRACT**

Currently, in order to estimate the seismic demand of a nonlinear structure, some methods always require a repeatedly iterative procedure no matter the elastic or inelastic response spectra was used in the procedure. Many studies dealt with the development of different inelastic spectra with the aim to simplify the evaluation of inelastic deformations and performance of structures. Recently, the concept of inelastic spectra has been adopted in the global scheme of the performance-based seismic design through capacity-spectrum methods. In this paper, an improved procedure applicable to the analysis and design of tall buildings is presented and illustrated by examples. Also, it is a new procedure for estimating the seismic deformation of Multi-Degree-of-Freedom systems. The accuracy of the improved procedure is verified against the nonlinear time history analysis results of two tall buildings. The comparison showed that the new method is capable to furnish accurate deformations and inter-story drifts.

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