

عنوان مقاله:

Analysis of Dynamic Characteristics of a Tall Building for Microtremors Using Recursive Modeling and Spectral Method

محل انتشار:

چهارمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1382)

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خلاصه مقاله:

The determination of the dynamic characteristics of actual structure using vibration measurements is a primary interest in structural engineering. In this paper the dynamic characteristics of a 35-story high-rise building are investigated for microtremor measurements. The modal parameters of the fundamental mode (natural frequency and damping) are obtained and discussed using recursive discrete-time modeling and spectral method. The effect of rocking motion on the results of dynamic characteristics of the building is discussed. A proposed method to calculate the transfer function considering the rocking motion using the spectral analysis is addressed and its effectiveness has been shown. It is also shown that in the recursive modeling, since the noise is removed from signal over the whole frequency band, short length of data is enough to obtain accurate modal parameters. This may reduce the time of the observation.

کلمات کلیدی:

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