



K. Ichimura, H. Kameda, A. Mita

Dynamic Performance Estimation of Tall Buildings Based On Wavelet Analysis and Output Only Identification

Издательство DEStech Publications, Lancaster, 2010 год

6 стр; формат: 23,5 x 16 см; библиографический список: 8 единиц
ISBN: 978-1-60595-024-2

Structural health monitoring (SHM) has become an important technology due to numerous design and construction malpractice scandals which have occurred and the seismic damage of related structures. For the practical use of SHM, the ability to accurately estimate the state of structures is becoming very important.

This study focuses on the determination of the modal parameters based on output only measurements. If an input is excited randomly, Random Decrement Technique (RDT) is applied to separate the random responses from the determination free vibrations. This algorithm is very simple, but RDT needs band-pass filtering procedure to decouple the multi modal component to single modal component.

In order to overcome the weakness of RDT, the method which integrates RDT and wavelet transform (WT) is proposed. WT is used as time-frequency representation for the determination of modal parameters of structures and can decouple the modal components automatically.

Ключевые слова:

Содержание.

Dynamic Performance Estimation of Tall Buildings Based On Wavelet Analysis and Output Only Identification