Analysis of structures subjected to external loads using the continuous wavelet transform and energy parameters

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ABSTRACT

The study of vibrations with respect to oscillatory movements of bodies and the forces that are associated with them. All bodies endowed with mass and elasticity are capable of vibration. Thus, most of machines and structures are subject to some degree of vibration the most human activities involve some form of vibration. The level of seismic damage of a structure is evaluated by damage rates which are based both the modal parameter (e.g., time, order and mode damping ratio) or the non-modal parameter (for example, draw ratio and displacement). The study of the dynamic behavior of these mechanical oscillations is the goal of this work is to propose that a system of concentrated masses and with n-degrees of freedom. External forces, particularly earthquake waves, excite the system. With numerical simulations we study the system, using continuous wavelet transform (CWT) associated with energy parameters.

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