

عنوان مقاله:

Enhancing of Buckling Load of Smart lightweight Columns Using Piezoelectric Actuators

محل انتشار:

کنفرانس بین المللی سبک سازی و زلزله (سال: 1389)

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خلاصه مقاله:

In this paper the ability of piezoelectric actuator materials to enhancement of buckling load of long Smart composite column is investigated. The theoretical model is three layers composite beam made up one long elastic host core and two surface piezoceramics patch which act as extensive actuation mechanism. The finite element modeling of Smart composite column is found using ANSYS® software. The buckling loads of host and smart composite column are calculated. At the next stage, for smart composite column, the piezoelectric patches at top and bottom are activated before first buckling mode occurs. This action will decrease the out of plane deflection or change the buckling mode of column from the first buckling mode to higher ones thereby the buckling load will increase. The analyses are performed for simply- simple supports

کلمات کلیدی:

Smart lightweight column, Buckling load, Piezoelectric actuators

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