Код: 10617

L. Pahlavan, C. Kassapoglou, Z. Gurdal

Wavelet-based Finite Element Method for Modeling Wave Propagation in Delaminated Composite Rings

A wavelet-based Finite Element method for simulation of wave propagation in thin composite rings with delamination has been developed. Having employed Daubechies compactly supported wavelets, the wave equation of a curved composite beam has been wavelet transformed and solved exactly in the spatial domain. For modeling the ring-type structure, the periodic boundary condition has been utilized in putting the curved beam elements together. By implementing the delaminated curved beam element, wave propagation in the damaged ring structure has been simulated. Numerical examples of delaminated composite rings have been provided in the paper thereby demonstrating the capabilities and advantages of the presented method.

Ключевые слова:

Содержание.
Wavelet-based Finite Element Method for Modeling Wave Propagation in Delaminated Composite Rings