

FINITE ELEMENT DYNAMIC ANALYSIS OF COMPOSITE STRUCTURE CRACKS

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Abstract : Material damages dynamic analysis is difficult to deal with different material geometry and mechanism. In addition, it is difficult to measuring the dynamic behavior of cracks, debond and delamination inside the material. Different simulation methods are developed in recent years for different physical features of mechanical systems like vibration and acoustic. In this paper nonlinear fracture in different location discussed in details. The main idea of this work is to perform dynamic analysis on different types of materials (from normal homogeneous material to complex composite laminates). Technical factors like cracks, voids, interfaces and the damages locations are evaluated. In this project the modal analysis is performed on different types of materials. The results could be helpful in finding modal frequencies, natural frequencies, Time domain and fast Fourier transform (FFT) in industrial applications.

Keywords : finite element method, dynamic analysis, vibration and acoustic, composite, crack, delamination.

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