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Vibration and Ultrasonic Based Methodologies for Damage Detection

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Much of Structural Health Monitoring (SHM) research is motivated by the fact that damage tolerant and fail-safe design of aircraft, aerospace and civil structures requires a substantial amount of inspection and defects-monitoring at regular intervals. This paper presents a review of experiences and applications carried out by the authors during the last five years separately and within collaborations between their belonging institutions. Results will be presented related to low-medium frequency health monitoring (global) approaches as well as to high frequency (local) approaches obtained employing piezoelectric patches acting as vibrations source and sensors, laser scanner vibrometer and acoustic emission ultrasonic sensors acting as vibrations sensors alternatively to the first ones. Presented results will show potentiality and limits of the approaches.

Ключевые слова:

Содержание.

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