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Fatigue Testing of a Smart Composite Patch

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A Structural Health Monitoring system providing information on the damage state of a bonded composite patch has been studied. This SHM system is made of three piezoceramic discs, embedded in the repair, which are used as emitters and sensors of Lamb waves. It has been shown that this setup is able to detect and to locate both a hole in the structure or a patch disbond [1,2]. This has been done owing to pulse-echo measurements and by comparing the measured signals with a reference state. In order to verify the generality of this approach, some mechanical tests for crack propagation under a smart patch have been performed, at three different temperatures (-50°C, 25°C and 70°C). It is shown that the developed SHM system can detect and follow the beginning of the crack growth.

Ключевые слова:

Содержание.

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