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Early Results of Lamb Waves Approach to Assess Corrosion Damage Using Direct Image Path in an Aeronautical Aluminum Alloy

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This paper presents an early Embraer's study of corrosion damage detection by thickness reduction effect using Lamb Waves Technology. This study is part of a set study of several SHM Technologies, like CVM (Comparative Vacuum Monitoring), EMI (Electro-Mechanical Impedance), AE (Acoustic Emission), LW (Lamb Waves). Those studies are under Embraer's R&D program. Non-destructive testing methods for rapid and reliable corrosion detection in complex metallic assemblies are an on-going challenge due to practicalities of inspection and geometric complexity. This work demonstrates the early Lamb Waves results for detecting and locating corrosion in aluminum alloys for aircraft structures. The testing were performed using Direct Image Path using Acellent Technologies Lamb Waves system. The experiments were performed using a plate with 1.6 mm thick. Artificially induced a series of thinning in the center of the test specimen. The experimental results indicate the Lamb Waves technique is high accurate and it is shown a promising application to detect corrosion damage.

Ключевые слова:

Содержание.

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