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Quantitative assessment of the improvement of the detection of defects by pulse thermography thanks to the TSR approach in the case of a smart composite repair patch

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Abstract

The work aims to assess quantitatively the improvement given by using the Thermographic Signal Reconstruction (TSR) approach to the detectivity of defects in structures. The considered structure is a smart composite repair patch used in aeronautics. Artificial defects simulating a debond at the patch/structure interface are to be detected. The signal to noise ratio of the defect in the sound structure background is calculated as an index of detectivity. A strategy is proposed for optimizing the time of observation allowing the best detection and characterization.

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