

Comparison of Signal Processing Techniques for Ultrasonic Inspection of Composite Materials

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Abstract : In this paper, two methods permitting the detection and estimation of delamination defect echoes are developed. These methods are based on signal processing techniques such as non linear filtering realised by Split Spectrum Processing (SSP) and estimation by EM algorithm. A simulation study of defect detection is realised and results are validated by experimental results obtained on two types of composite taken from aircraft like fiber-reinforced multi-layered composite materials.

Keywords : Ultrasonic NDE, composite materials, SSP, EM algorithm