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# Enhancement of phased array ultrasonic signal in compositematerials using TMST algorithm

**A. BENAMMAR, R. Drai, A. Kechida, L. DRIS, F. CHIBANE**

**Abstract:** In this paper, we apply a new technique for the ultrasonic phased array signal enhancement. It is based on the threshold modifiedS-transform (TMST). The signal processing algorithms generally give very satisfactory results on synthetic signals verifying theimplicit or explicit hypotheses on which they are constructed. The obtained performances on the real signals can be howeverdifferent radically. Time–frequency analysis methods are mainly used to improve the defects detection resolution. Significantperformance enhancement is confirmed when the proposed approach is tested with the simulation of the B-scan signals contain acloser delamination to the front face. The experimental results show that the TMST Algorithm can enhance the quality of imageprovided by composite materials contained delamination defect.

**Keywords :** Ultrasonic Phased Array, composite materials, S-transform, TMST Algorithm