

4.5.11. DUAL FILTERING BASED TIME FREQUENCY METHOD FOR ULTRASONIC MATERIAL EVALUATION

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Because of the advantages such as exact defect localization, sensitivity to flaw detection and detecting inner flaws of work pieces, ultrasonic testing is widely used in the inspection of industrial components. However, the reliability and quality of tests are considerably affected by noise and spurious signals, mainly in materials with coarse-grain structure or composite samples.

Wavelet is an important time-frequency analysis technology, much suitable for processing ultrasonic signals with unstable and time-varying sharp pulse. This paper describes the proposal of dual filtering algorithm used for ultrasonic A-scan signal denoising. This method is based on application of smoothing functional and wavelet applications.