

Classification of weld defects detected by ultrasonics using signal processing techniques

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Abstract : Discriminatory features from temporal and spectral signals of detected echo are extracted. the compact feature vector obtained will be then classified by different methods: K Nearest Neighbour algorithm, statistical bayesian algorithm and artificial neural network. other discriminatory features using a multiresolution analysis technique, called discrete wavelet transform are also extracted. then, the obtained feature vector will be also classified by the same algorithms. experimental results obtained from a data bank constituted by echoes detected in welds will be compared and discussed.

Keywords : NDT, Ultrasonics, defects classification, digital wavelets transform, neural networks