Abstract

Non Destructive testing of structural materials is an important activity in many industries. Ultrasonic NDT is one such method widely used in this field. Pulse Echo and Through Transmission are conventional testing techniques which use reflected and transmitted sound energy respectively. But these techniques are highly dependent on defect orientation. Time of Flight Diffraction (TOFD) is a recent method which uses diffracted sound energy to detect the defects and is independent of orientation of the defects in the material. TOFD signals are dominated by noise arriving from various sources namely instrumental noise, material (structural) noise, thermal noise etc. Signal processing is an important step in the evaluation of the signals for detecting, positioning and characterizing the defects. Fourier Transform is widely used in the analysis and de-noising of signals of different kind. In this paper Ultrasonic TOFD
signals obtained from Austenitic Stainless Steel weldments are analyzed using Fourier Transforms.

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Index Terms

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Keywords

Ultrasonic  Defect  NDT  TOFD  Fourier Transform  Austenitic Stainless Steel  Welds