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Ultrasonic Guided Waves SHM for Sign Support Structure

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This paper describes a method based on Ultrasonic Guided Waves (UGWs) for the detection of cracks in sign support structures. The method combines the advantages of UGWs with the outcomes of statistics to extract defect-sensitive features aimed at performing a multivariate diagnosis of damage. The general framework presented in this paper is applied to ultrasonic data collected from a dismantled overhead sign support structure tested at the University of Pittsburgh. The probing hardware consists of a National Instruments-PXI platform that controls the generation and detection of the ultrasonic signals by means of piezoelectric transducers made of Lead Zirconate Titanate. The effectiveness of the proposed approach to diagnose the presence of small defects around welded joints that connect diagonal members to the main chord is demonstrated.

Ключевые слова:

Содержание.

Application of Online NDT Techniques to Decommissioned Bridge Testing