ASurface Wave Analysis Technique for Crack Sizing

李昇峻、葉競榮

E-mail: 9314947@mail.dyu.edu.tw

ABSTRACT

In this study, a method of surface wave inspection is approached to detect an object ’s surface condition. Surface wave inspection is performed by emitting ultrasonic waves along the surface of the object, and then according to the acquired property values of wave reflection, to determine whether if there is an existence of abnormal surface condition, for example, a fissure.During the employment of ultrasonic wave aiming to detect possible fissure, multiple reflective signals are returned and recorded. By analyzing these signals, formation of path composition by various waves is then formulated. Furthermore, these signals are proved to be a useful tool to double check for accuracy of the fissure height. By combining the results drawn from the above analyses, mean and standard deviation for multiple estimates are derived, as well as the confidence level. In conclusion, it follows from what has been said that, accurate fissure height derived from surface wave inspection is an applicable index for equipment safety and maintenance analyses.

Keywords : Ultrasonic Testing, Surface waves, Flaw

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