

Measurement of the defect size by shearography or other interferometric techniques

Fabrice R. Michel, Yvon L. Renotte, Serge Habraken

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Abstract

Shearography is an interferometric technique suitable for detecting defects because they yield singular fringes and high phase values in wrapped and unwrapped phasemaps, respectively. We propose a methodology that leads to the defect size from unwrapped phasemap by extracting the size of the high phase values area. The area size is evaluated, thanks to a wavelet transform algorithm that enables the location of its borders. The performances of the methodology and of the algorithm have been tested by applying them on a defect where the size is known. An error less than 1.5% root mean square was reached. Our approach is independent of the shearing amount and of the phase profile, and it can be extended for other interferometric techniques. © 2012 Society of Photo-Optical Instrumentation Engineers (SPIE) 0091-3286/2012/\$25.00 © 2012 SPIE

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