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Thermal Waves for NDE of Aircraft: Comparison of Lockin Thermography and Lockin Interferometry

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Abstract

Optically and ultrasonic excited lockin thermography have been set in contrast with lockin shearography theoretically and experimentally. Investigated criteria are the differences in depth range, defect selectivity and the comparison of thermal and mechanical response using the example of model specimens and real large scale aircraft components. An approach for the application of data fusion for defect classification through combination of thermography and shearography phase angle images follows. Due to lack of experience with this technique, it is applied to model specimens only instead of large scale aircraft components. However, the gradient image characteristic of shearography impedes distinct information extraction.

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