

Characterization of Defects in Curved CFRP Samples using Pulsed Thermography and 3D Finite Element Simulation

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Abstract

We present results obtained from Pulsed Thermography on curved components made up of CFRP. In the specimens inclusions of Teflon stripes with different sizes and orientation are positioned at different depths. Especially in the curved regions, it is important to separate defect-related effects on the surface temperature from effects due to the complex sample shape like curvatures or edges. The usage of 3D finite element simulation, taking into account anisotropic heat conduction and inhomogeneous heat excitation as well as orientation dependent heat absorption, makes it possible to interpret the thermographic result in order to reduce geometry effects.

Keywords: Active Thermography, Complex Structure, Finite Element Simulation

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