Data Fusion of Lockin-Thermography Phase Images

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Abstract

Lockin-thermography is a valuable tool in non-destructive testing of materials because it provides reliable and easy-to-interpret phase images. This paper presents a way to combine phase images obtained at different lockin-frequencies by using scatter plots. Not only features like defects can be extracted out of the raw data, but also thermal wave parameters like reflection coefficients. The extracted features can be traced back to the original image. Additionally, deviations from the expected and well-known model of one-dimensional heat flow reveal lateral heat flow within the measured sample.

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