



## An original non destructive technique for fibre rate measurement

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Auteur Autrique, Laurent [1], Cano, M. [2], Perez, Laetitia [3]

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Résumé en anglais This study presents an original method for estimating the rate of resin content in orthotropic layered composite materials while avoiding their destruction. The composite materials considered, commonly used in aeronautic, result of the impregnation of fibre reinforced by epoxy resin. Thermal or mechanical analyses using numerical tools are essential to optimize their implementation, and to better understand their behaviour. The prediction quality of these tools requires the knowledge of input parameters with enough accuracy. Usually dedicated to the identification of the thermal diffusivity, the proposed approach consists in comparing the responses obtained on thermal resin and these obtained on pre-impregnated fibres under periodic thermal waves. An experimental device has been developed and a test campaign has been conducted. The modelling of heat transfer through the complex temperatures method has also been implemented.

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