# A new delamination identification method based on Kullback-Leibler divergence in composites

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**Abstract:**

In this paper a noise-robust delamination identification method is presented for the localization of delamination in the laminated composite plate, and the method works based on the structural mode shape. The main innovation of this study starts with employing the Kullback-Leibler divergence (KLD) and its two symmetrical versions as the delamination sensitive feature, and then the error of the flexibility proportional modal assurance criterion (EFPMAC) is obtained based on the KLD and its two approximations. To show the advantage of the proposed method, the modal strain energy (MSE) is adopted, and the delamination identification in the laminated composite plate is adopted to describe the feasibility of it. In order to investigate the immunity to noise, four levels of noise are taken into account. Finally, results show that the proposed method can deliver encouraging results of the delamination identification.

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