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# Radiographic Image Segmentation Based on Gaussian Mixture Model

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**Abstract :** In this work, we propose to use an image segmentation method based on Gaussian mixture model. The observed image is considered as a mixture of multivariate densities and the mixture parameters are estimated by the expectation maximization (EM) algorithm. The segmentation is completed by clustering each pixel into a component according to the maximum likelihood (ML) estimation. This method has been applied to a variety of radiographic images of weld defects and satisfactory segmentation results have been reported.

**Keywords :** — expectation maximization algorithm, fuzzy C-means algorithm, Gaussian mixture model, image segmentation, radiographic images, weld defect