

# Segmentation of the Weld Radiographic Images by the Level Set Method using the Kernel Fuzzy C-Means Clustering.

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**Abstract :** In this paper, we are interested to segment weld radiographic images using the level set method (LSM) based on kernel fuzzy c-means clustering (KFCM) in order to extract the region of interest (weld defects) and to improve the precision of segmentation. The proposed approach contains two successive necessary stages. The first one consists in the application of kernel fuzzy c-means algorithm to get a clustered image. The second stage is based on the using of the appropriate class of the clustered image as an initial contour of the level set method to extract the defects boundaries. The experimental results have shown that the proposed model can extract successfully the interest region from image and confirm its efficiency for welding defects segmentation.

**Keywords :** Level set, kernel fuzzy c-means, weld defects, weld radiographic images, image segmentation