

Segmentation of welding defects using level set methods

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Abstract: Non-destructive testing (NDT) is a technique used in science and industry to evaluate the properties of a material without causing damage. In this paper we propose a method for segmenting radiographic images of welding in order to extract the welding defects which may occur during the welding process. We study different methods of level set and choose the model adapted to our application. The methods presented here take the property of local segmentation geodesic active contours and have the ability to change the topology automatically. The computation time is considerably reduced after taking into account a new level set function which eliminates the re-initialisation procedure. Satisfactory results are obtained after applying this algorithm both on synthetic and real images.

Keywords : image segmentation, Level set, weld defects, Radiographic image