The 3rd International Conference on welding, nondestructive testing and the industry of materials and alloys (ICWNDT-MI'12)

2012

MULTIPHASE LEVEL SETS MODEL APPLIED TO WELD RADIOGRAPHIC IMAGES SEGMENTATION.

Y. Boutiche, N. Ramou, M. Halimi

Abstract : This paper is devoted to a crucial task in image analysis which is segmentation. Our aim is to give the structural form of industrial radiographic images. In this purpose, we have used an implicit region oriented deformable model. In this context the criteria to stop the curves' evolution is the statistical information of the image grey level, this gives many advantages compared to those that used the gradient.The functional is minimized via a piecewise constant approximation and Multiphase level set. In this situation we need n level set function to represent up to 2^n segments or regions. The model avoids automatically the problems of vacuum and overlap. The numerical results for synthetic and weld radiographic images are satisfactory.