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Adaptive and Statistical Polygonal Curve forMultiple Weld Defects Detection inRadiographic Images

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Abstract: With the advances in computer science and artificial intelligencetechniques, the opportunity to develop computer aided techniquefor radiographic inspection in Non Destructive Testing arose. This paperpresents an adaptive probabilistic region-based deformable model usingan explicit representation that aims to extract automatically defects froma radiographic film. To deal with the height computation cost of suchmodel, an adaptive polygonal representation is used and the search spacefor the greedy-based model evolution is reduced. Furthermore, we adaptthis explicit model to handle topological changes in presence of multipledefects.

Keywords : Radiographic inspection, Explicit deformable model, adaptive contour representation, Maximum likelihood criterion, Multiple contours