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PATTERN RECOGNITION IN ULTRASONIC IMAGERY USING THE HOUGH TRANSFORM

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Abstract : In non destructive testing of materials, the ultrasonic imagery is a field in full rise. Indeed , more than one convivial representation of the results , the operations of detection , localization and sizing of the defects can be carried out automatically by the analysis of synthesized images. The problem breaks up in general into a phase of preprocessing to only limit the quantity of information to useful and a processing phase in order to characterize the defect. In our article, we will briefly describe the the ultrasonic images formation said C-SCAN and TOFD, before seeing how a high pass filtering makes it possible to reduce the image c-scan to the only points of the defect edges. This preprocessing reduces considerably calculations for using the Hough transform in patterns recognition of defects in the case of C-SCAN image , and the localization of cracks in the case of the TOFD image

Keywords : Non destructive testing, Ultrasonic imagery, Edge detection, Hough transform