

Video Processing and Analysis for Endoscopy-Based Internal Pipeline Inspection

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Abstract: Because of the increasing requirements in regards to the pipeline transport regulations, the operators take care to the rigorous application of checking routines that ensure nonoccurrence of leaks and failures. In situ pipe inspection systems such as endoscopy, remains a reliable mean to diagnose possible abnormalities in the interior of a pipe such as corrosion. Through digital video processing, the acquired videos and images are analyzed and interpreted to detect the damaged and the risky pipeline areas. Thus, the objective of this work is to bring a powerful analysis tool for a rigorous pipeline inspection through the implementation of specific algorithms dedicated to this application for a precise delimitation of the defective zones and a reliable interpretation of the defect implicated, in spite of the drastic conditions inherent to the evolution of the endoscope inside the pipeline and the quality of the acquired images and videos.

Keywords : video processing, endoscopy, Pipeline inspection