Deterministic Evaluation of Digital Images of Passive Radiation Detectors

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Abstract. When processing and analyzing images in everyday life, we are often faced with identifying and describing the shapes, colors, or positions of objects that appear in them. Sometimes a small detail is enough to give the image a different structure. A good example could be the detection of ionizing radiation, where irradiated passive detectors could produce digital images contacting tracks caused by radiation. For the analysis of such images possessional tools are available at the market, such as the TASLImage system. TASLImage produces images from the CR-39 solid state track detectors and then analyses the tracks created by radiation based on specific parameter reflecting the type and intensity of radiation. Commercial systems, such as TASLImage are validated tools for specific applications, hence not allowing the user modifying its a source code and implementing new features. This could be overcome if the evaluation software is developed by the user. In this paper, we will describe the design of a program that will be used in the same way as TASLImage to evaluate digital images.