

Experimental Setup to capture high resolution images for Quality Control of GEM Foils

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We present an experimental setup developed at the Detector Laboratory at Antonio Nariño University to automatically and precisely capture high resolution images of GEM foils. These high resolution images are then used for quality control of the corresponding GEM foils through an automatic determination of defects and geometry changes of the thousands of the micro-holes contained in a GEM foil. The setup consists of one 30 x 30 centimeters dual axis linear stepper with a camera with a CMOS sensor to capture the high resolution images, and finally a software, SOFA Software for Foils Analysis for the automatic quality control of the foils through image analysis. With this set up and software, we can identify variations in the geometry of the micro-holes of a GEM-foil up to one pixel = 1.25 μm . The automatization of image capture and image analysis improve the present quality control of GEM foils in accuracy, efficiency and cost reduction.

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