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## A procedure for the dynamic range characterization of X-ray imaging linear and TDI detectors

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ABSTRACT: This paper presents a methodology to fully characterize the dynamic range of a linear X-ray detector, usually employed to perform radiography and tomography. The proposed procedure analyzes each pixel of the detector and presents the results both in terms of general performance of the detector and as a spatial distribution of different parameters for each pixel. This method has been applied to three X-ray detectors: one linear and two TDI (Time Delay Integration) detectors, used to implement X-ray imaging setups inside the neu\_ART project. The results obtained from this characterization, carried out in experimental conditions typically employed during real X-ray imaging experiments, allow to completely determine the behavior and the limits of the detectors and to optimize the procedure used to acquire radiographic and tomographic data, especially in terms of determining the maximum exposure time that can be used to achieve the best signal quality with a faster acquisition.

KEYWORDS: X-ray detectors; Inspection with X-rays

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