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# Geometric Calibration of Computed Tomography Equipment

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**Abstract :** X-ray computed tomography (CT) technology has been used in the electronics industry as one of the non-destructive inspection tools for years. The key advantage of X-ray computed tomography technology superior to traditional optical inspection is the penetrating characteristics of X-rays can be used to detect defects in the interior of objects. The objective of this study is to find a way to estimate the system geometric deviation of X-ray CT equipment. Projection trajectories of the characteristic points of standard parts were tracked, and ways to calculate the deviation of various geometric parameters of the system will be proposed and evaluated. A simulation study will be conducted to first find out the effects of system geometric deviation on projected trajectories. Then ways to estimate geometric deviation with collected trajectories will be proposed and tested through simulations.

**Keywords :** geometric calibration, X-ray computed tomography, trajectory tracing, reconstruction optimization
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