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Abstract

Compared with conventional energy-integrating detector (EID)-based computed tomography (CT), photon-counting detector CT (PCD CT) provides significant advantages such as reduced electronic noise, increased contrast-to-noise ratio, decreased metal artifacts; and improved spatial resolution, material decomposition, and dose efficiency. The primary difference between the two detectors are that a) EID integrates all photon energy levels while b) PCD can discriminate the energy level of each incident photon by counting the number of photons according to a defined energy threshold. In this paper, the theoretical design rules of photon counting CT are described. And the potential applications will be discussed.

Brief Biosketch

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