8th International Conference on Position Sensitive Detectors



Contribution ID: 35

Type: Oral Contribution

Image-transfer properties of a microCT system based on a flat panel detector

Tuesday 2 September 2008 13:50 (20 minutes)

A computed microtomography system (microCT) based on a CMOS flat panel detector (FPD) has been recently developed at Instituto de Fisica, UNAM, and is currently being characterised. The initial tests include the measurement of X-ray spectra using a CdTe detector, and the determination of the image transfer characteristics of the flat panel detector, such as linearity of response, MTF, noise and DQE. The alignment of the system is carried out with a specially build phantom using the method proposed by Noo et al. for cone beam irradiation geometry. Tomographic image reconstruction is performed with in-house developed programs based on the Feldkamp algorithm, and calibration in Hounsfield Units (HU) is carried out by means of a tissue-equivalent phantom. Finally, the dose performance of the system has been evaluated using TLD-100 chips and EBT GafChromic film, and the results have been compared with Monte Carlo simulations. In this work an overview of the main system characterisctics is presented, with an emphasis on the image transfer characteristics of the flat panel detector.

Author: Dr MARTINEZ-DAVALOS

Presenter: Dr MARTINEZ-DAVALOS

Session Classification: Applications in Nuclear Medicine and Radiology

Track Classification: Applications in Nuclear Medicine and Radiology