

Abstract Submitted
for the TSF14 Meeting of
The American Physical Society

Scientific Modeling of Strip Positron Emission Tomography

FRANK CHU, LEONARDO A. BELLO PUENTES, Texas A&M Univ — Recent developments in medical imaging has shown promise in strip type PET scans. We designed a simulation package with Java and MATLAB that implements user drawn scintillating detectors which records back to back photon emissions from a free drawn source array. Additionally, it utilizes scripts which reconstruct the image using a multistep linear transformation. The resolution and amount of data acquired is dependent on the ADC frequency, size of the detector, and detector spacing. One of the challenges is to obtain high resolution images and data quantity while limiting detector size and spacing. In the future, we plan on improving the simulation to account for probabilistic special case scenarios, adding three dimensional image reconstruction, and including energy based analysis.

Frank Chu
Texas A&M Univ

Date submitted: 25 Sep 2014

Electronic form version 1.4