

D. Steinberg, V. Bashkirov, V. Feng, R.F. Hurley, R.P. Johnson, S. Macafee, T. Plautz, H.F.-W. Sadrozinski, R. Schulte and A. Zatserklyaniy, Monte Carlo simulations for the development a clinical proton CT scanner, *Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC), 2012 IEEE*, pp. 1311-1315. Oct. 27-Nov. 3, **2012**, Anaheim, CA, USA.
DOI:10.1109/NSSMIC.2012.6551320.

Abstract

In support of developing the next phase of a proton computed tomography (pCT) scanner with features making it applicable to clinical situations, much insight can be gained through Monte Carlo simulation using Geant4. Careful simulation of energy/range detectors, as well as silicon strip detectors (SSDs), has offered insights into the physical limitations placed on a pCT scanner. Simulation also offers the opportunity to evaluate different detector design schemes and regimes for reconstructing CT images using protons.