Contribution ID: **32** Type: **not specified**

A new method for silicon sensor charge calibration using Compton scattering

Saturday, 1 December 2018 09:55 (10 minutes)

As silicon sensors become increasingly thin, the threshold for charge detection decreases, making a calibration of the sensor's charge sensitivity with traditional sources difficult. We present a new method for charge sensitivity calibration using the Compton scattering of photons emitted from an radioactive source or x-ray generator. The electron scattered from the photon ranges out near the point of scattering, ionizing the silicon. An accurate measurement of the scattering angle of the photon, made possible by the use of a spectrometer attached to a pivot, allows for precise knowledge of the deposited charge. In the past, this method has been used for calibration of scintillators, but to our knowledge never for silicon detectors; in particular, here it has been studied using a 150 micron silicon sensor on an RD53a chip.

Session

Lightning Round (5+3 min)

Primary authors: MCCORMACK, William; GARCIA-SCIVERES, Maurice

Presenter: MCCORMACK, William

Session Classification: Lightning Talks