

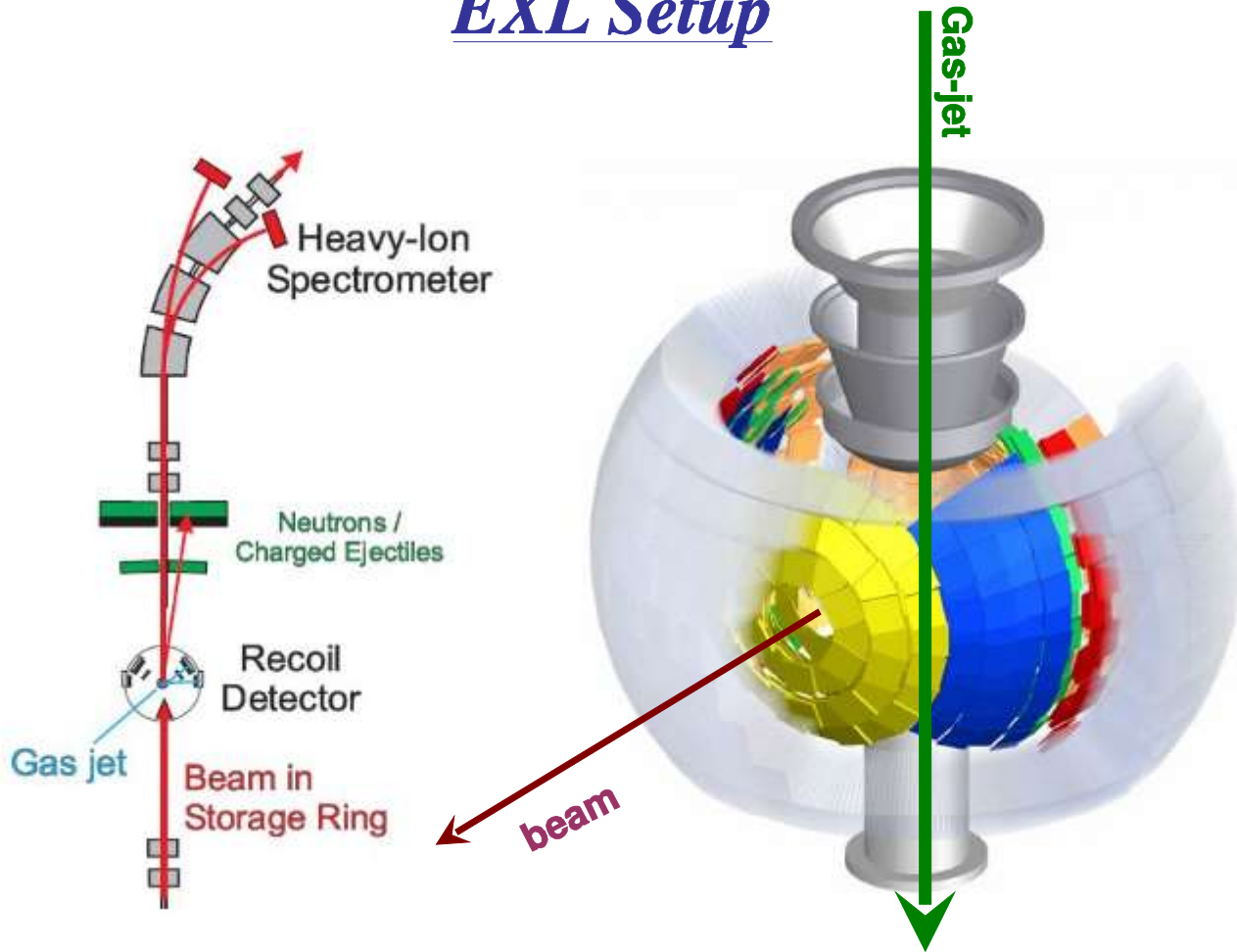


The EXL Silicon Recoil Detector

Yu. Zalite, A. Zalite

EXL Setup

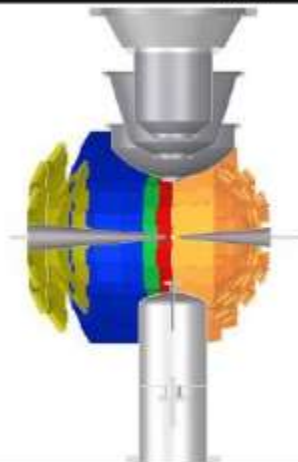
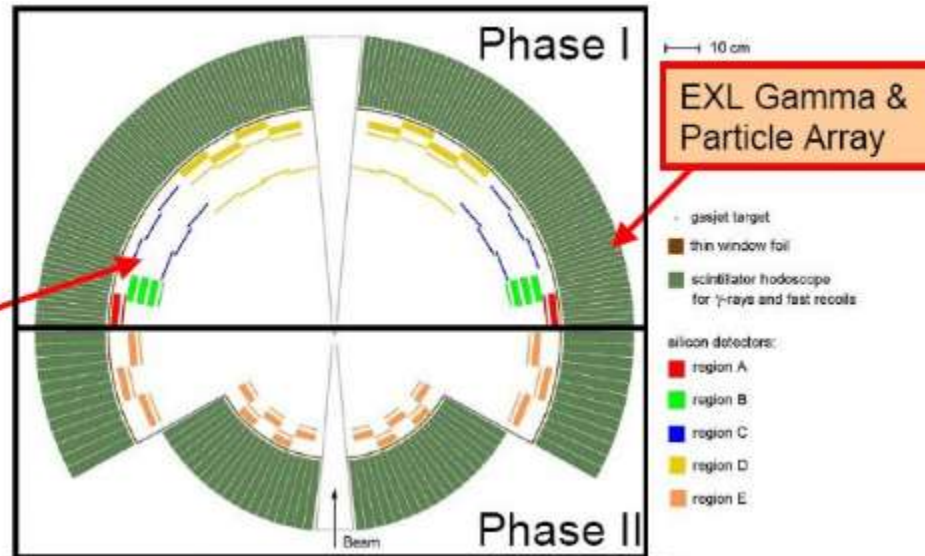
EXL Setup



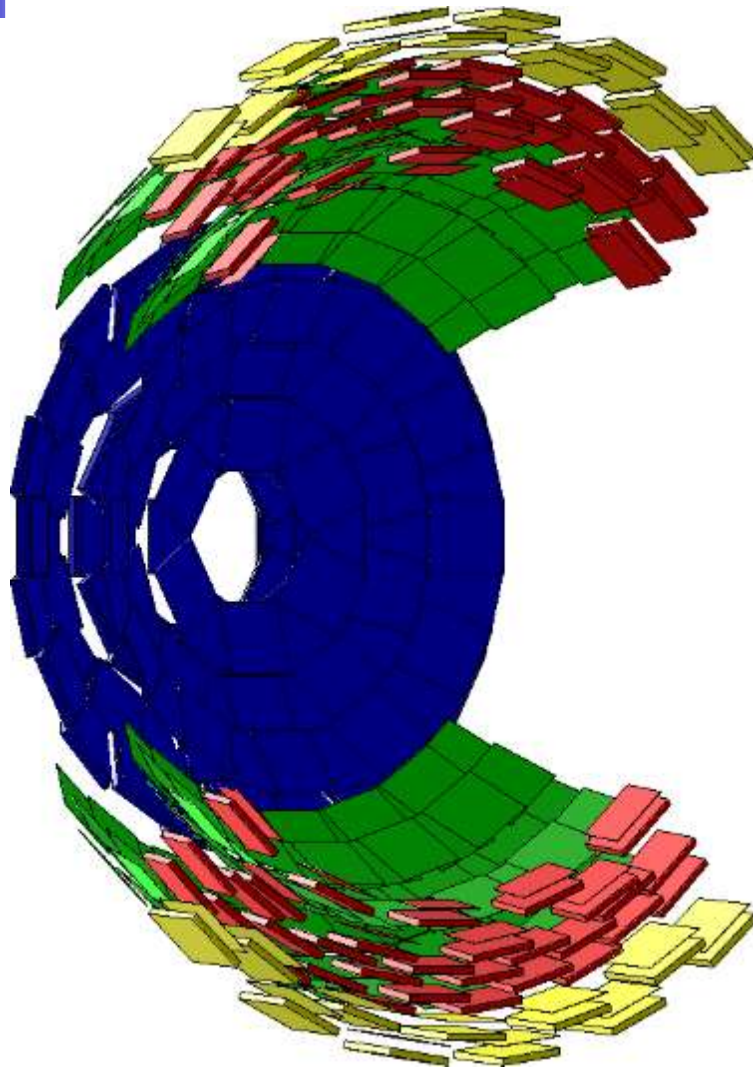
Silicon Recoil Detector

EXL
Recoil & Gamma
Array

EXL Silicon
Particle Array



Silicon Recoil Detector



ESPA

Geometry by Andrei Zalite, Milano

➤ **Si DSSD**

300 μm thick, spatial resolution better than 500 μm in x and y, ΔE 30 keV (FWHM).

➤ **Thin Si DSSD**

<100 μm thick, spatial resolution better than 100 μm in x and y, ΔE 30 keV (FWHM).

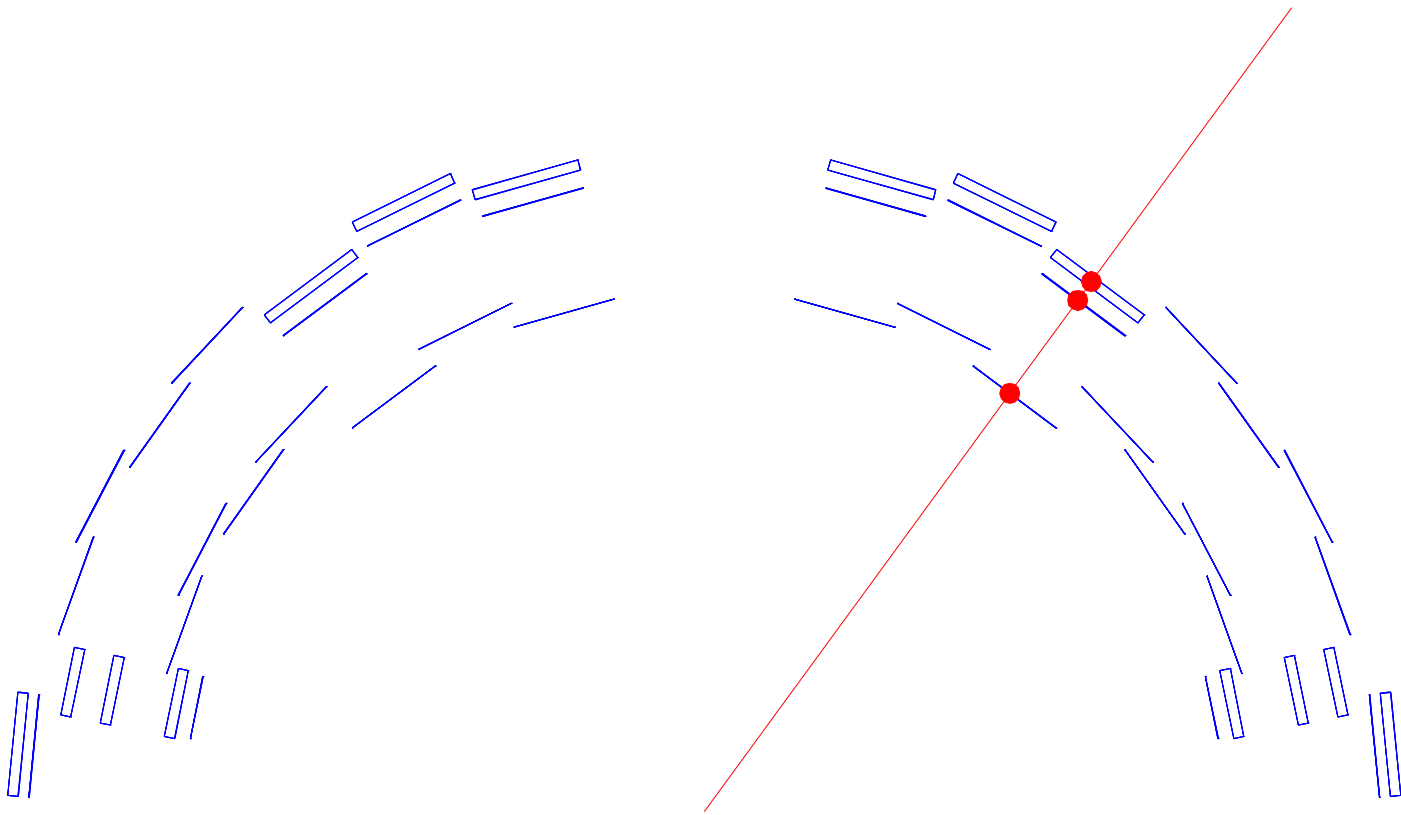
➤ **Si(Li)**

9 mm thick, large area 100x100 mm², ΔE 50 keV (FWHM).

➤ **CsI crystals**

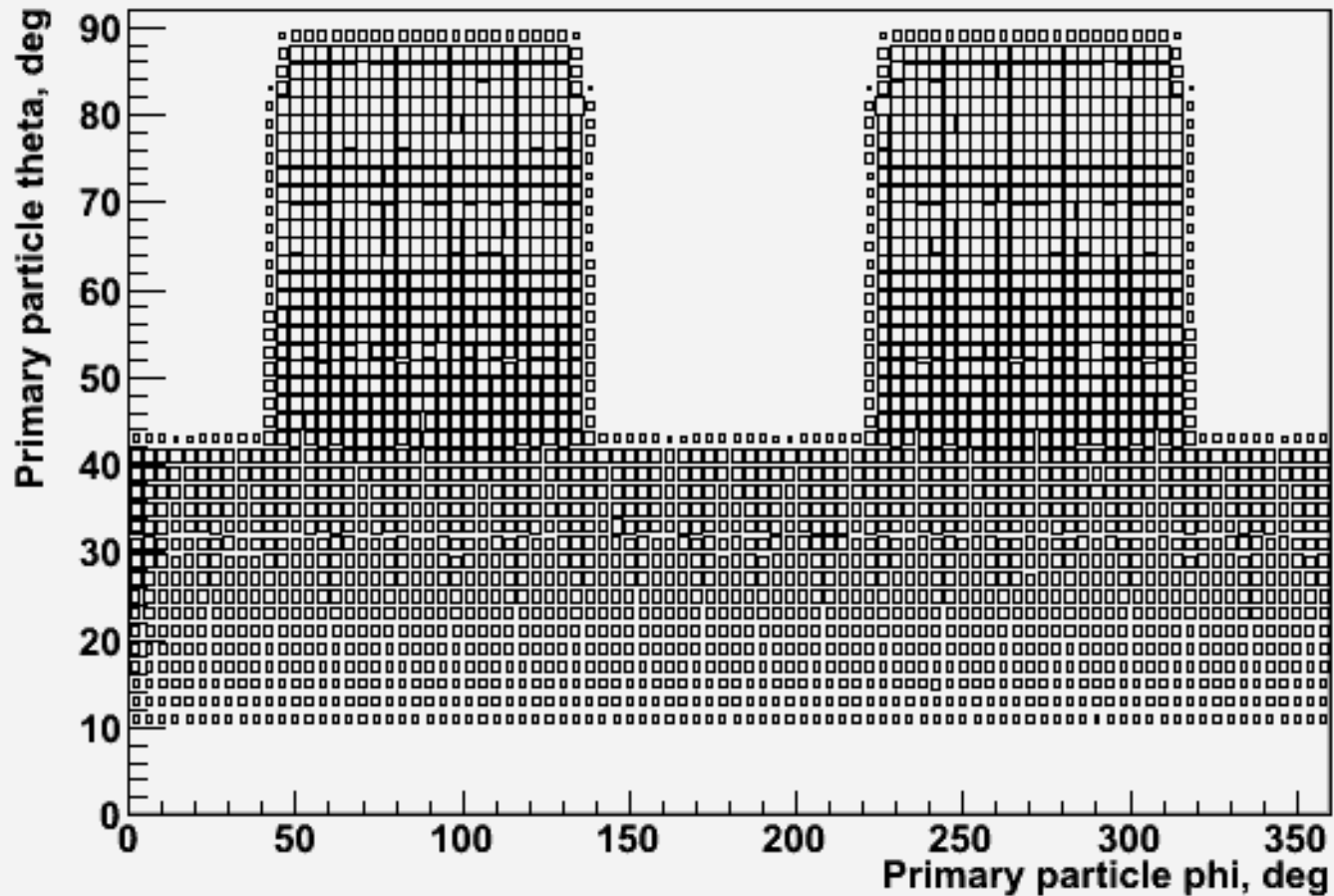
High efficiency, high resolution, 20 cm thick.

Silicon Recoil Detector



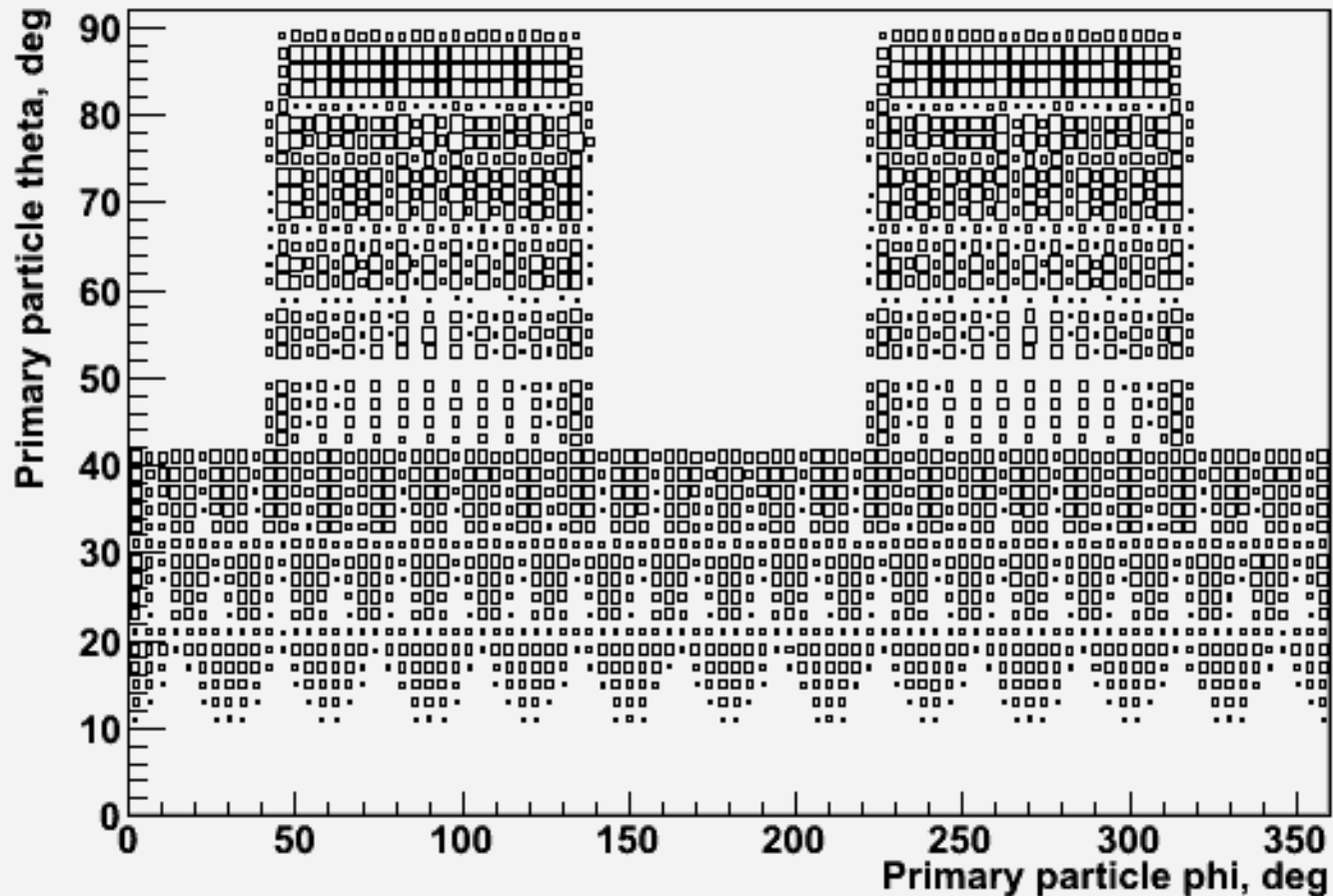
Silicon Recoil Detector

Regions D, C, B, A: geantino



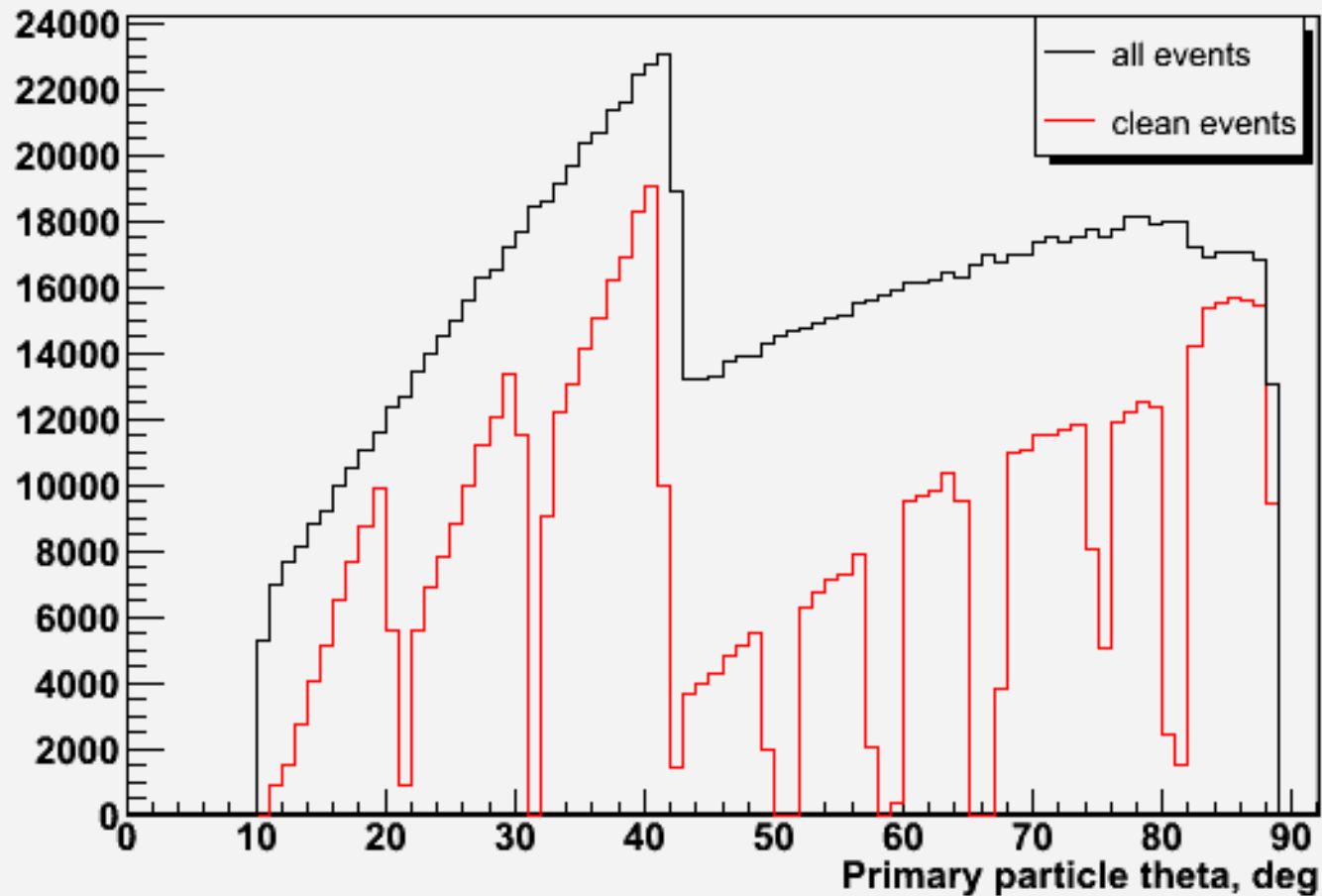
Overlap of Silicon Detectors

Regions D, C, B, A: geantino



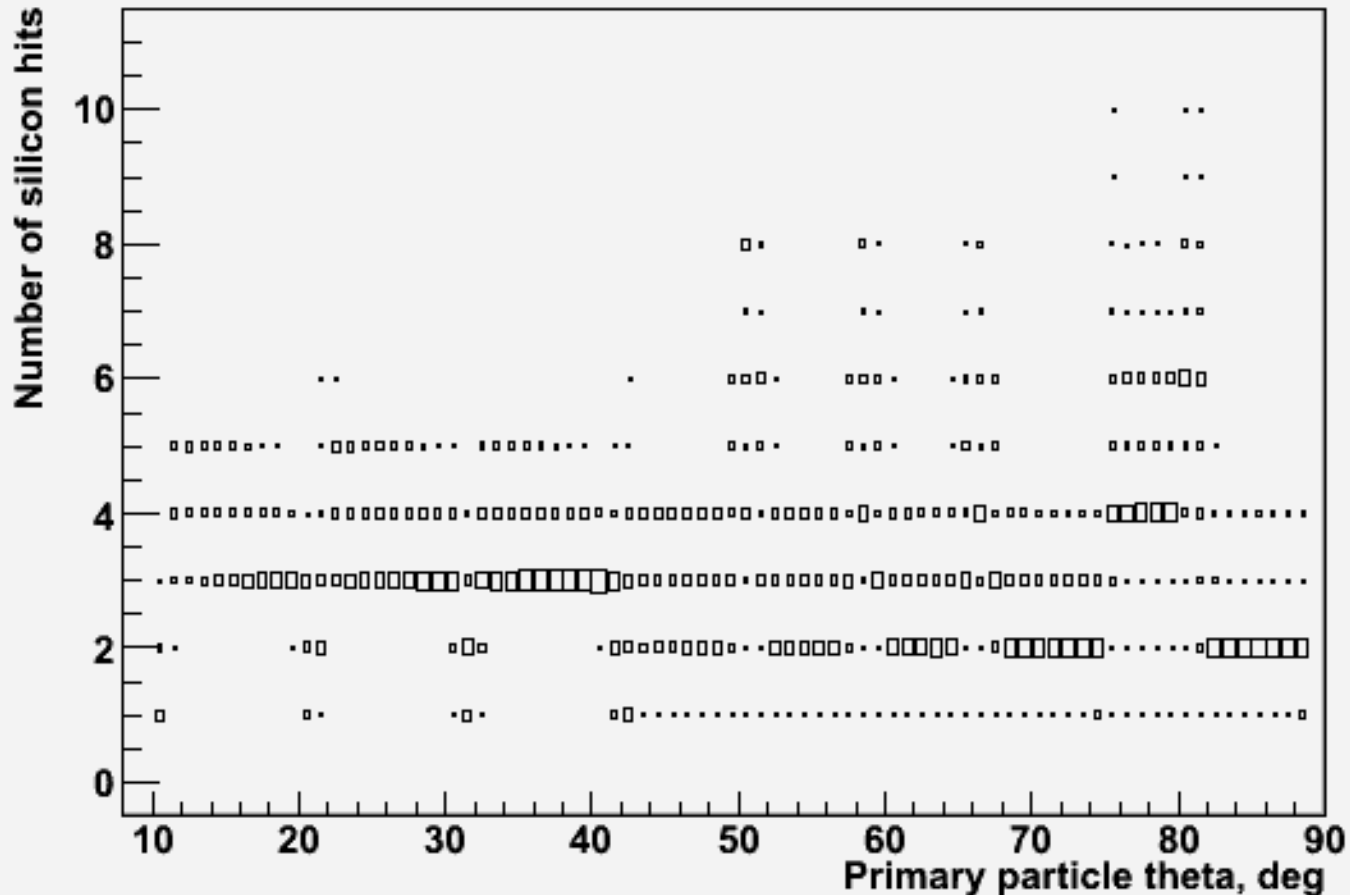
Overlap of Silicon Detectors

Regions D, C, B, A: geantino



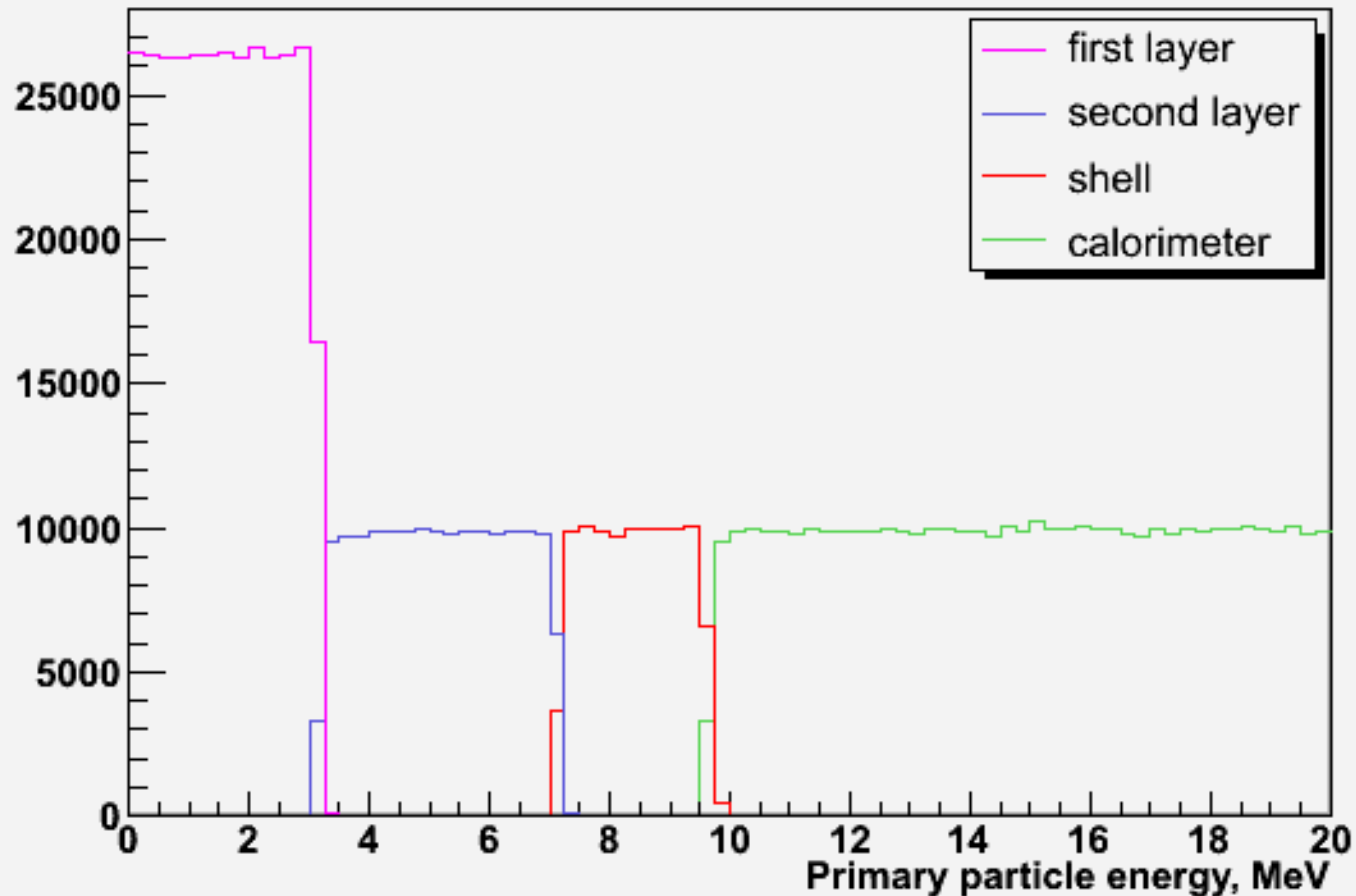
Overlap of Silicon Detectors

Regions D, C, B, A: geantino



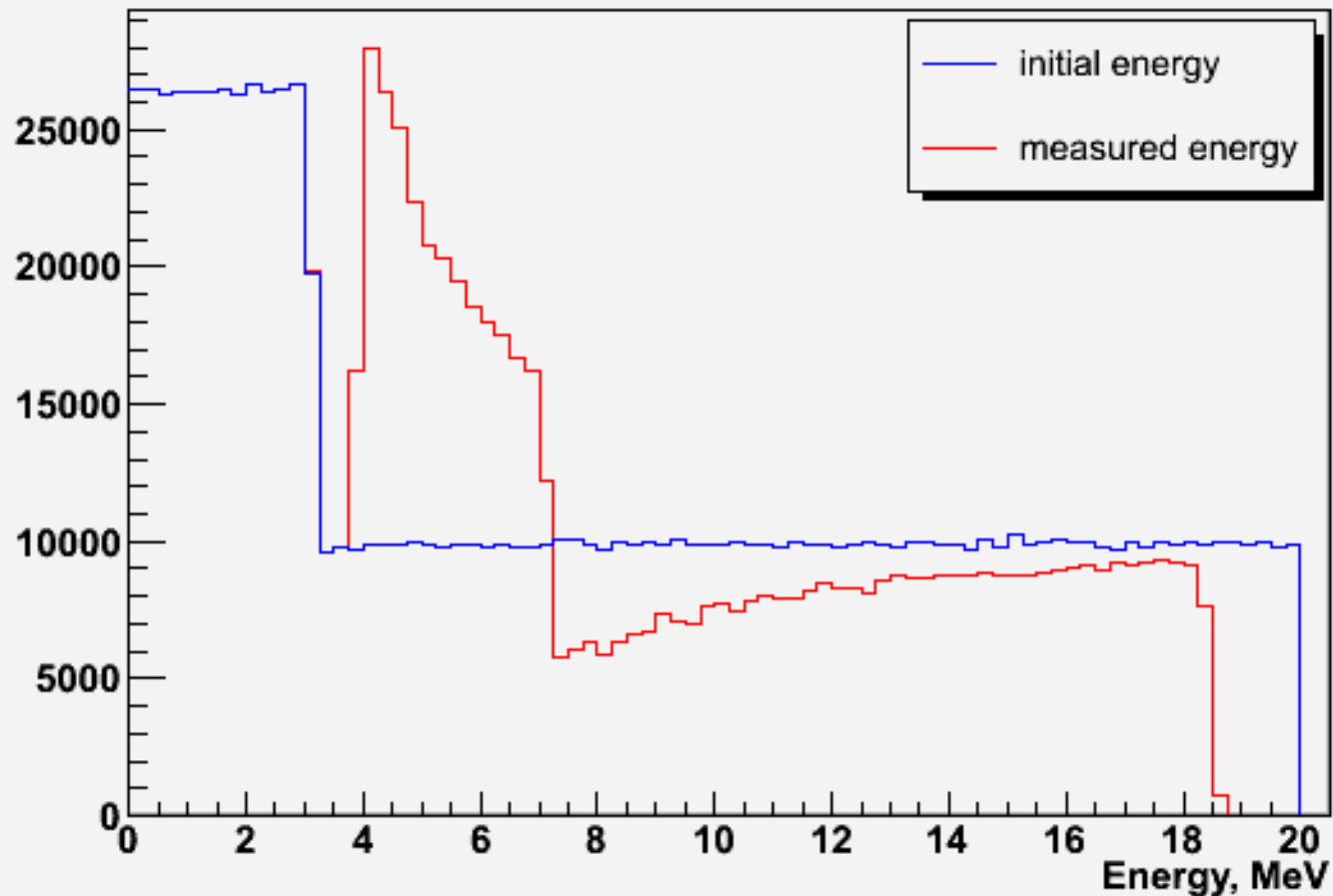
Energy Measurement

Region C, two layers + shell + calo: protons



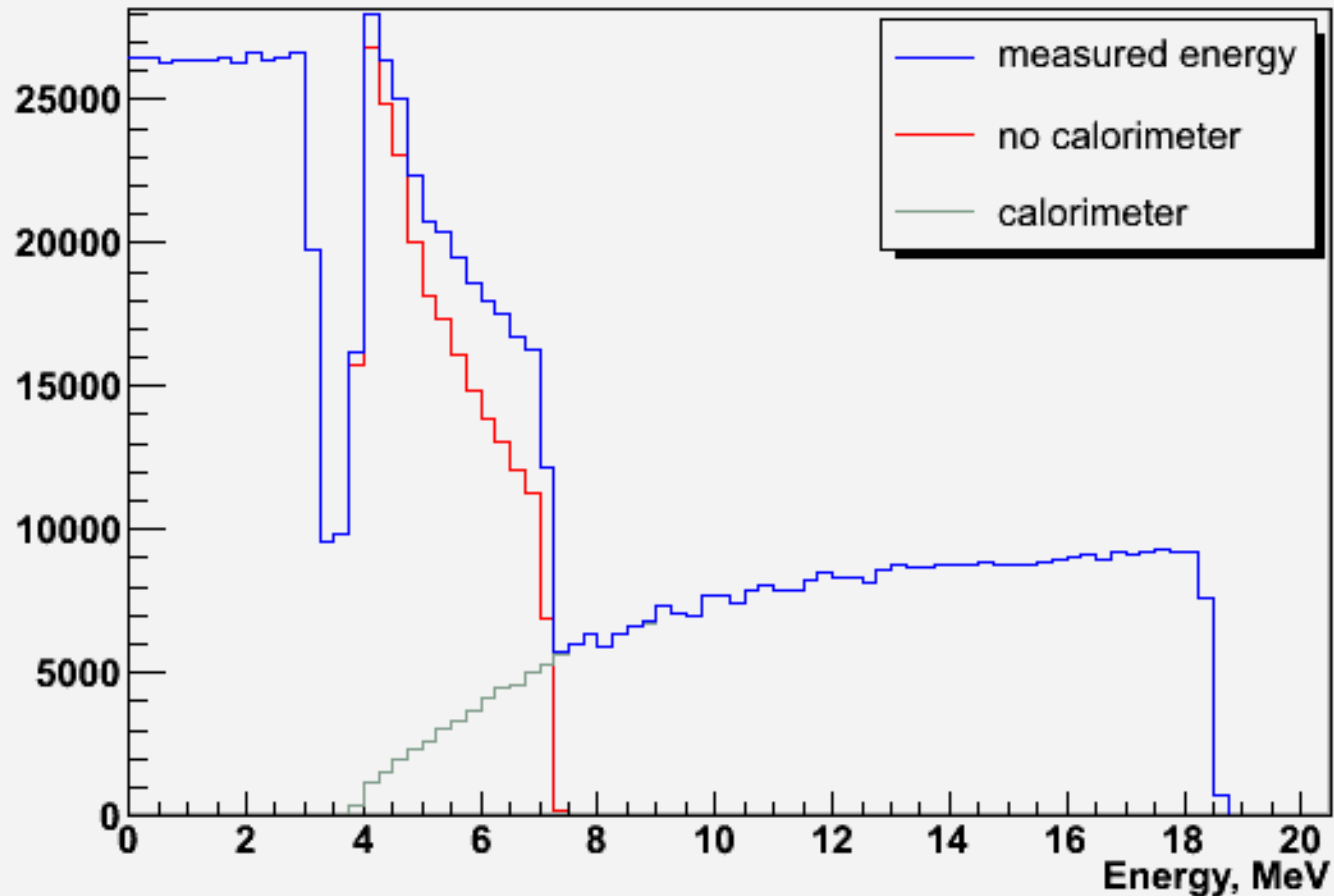
Energy Measurement

Region C, two layers + shell + calo: protons



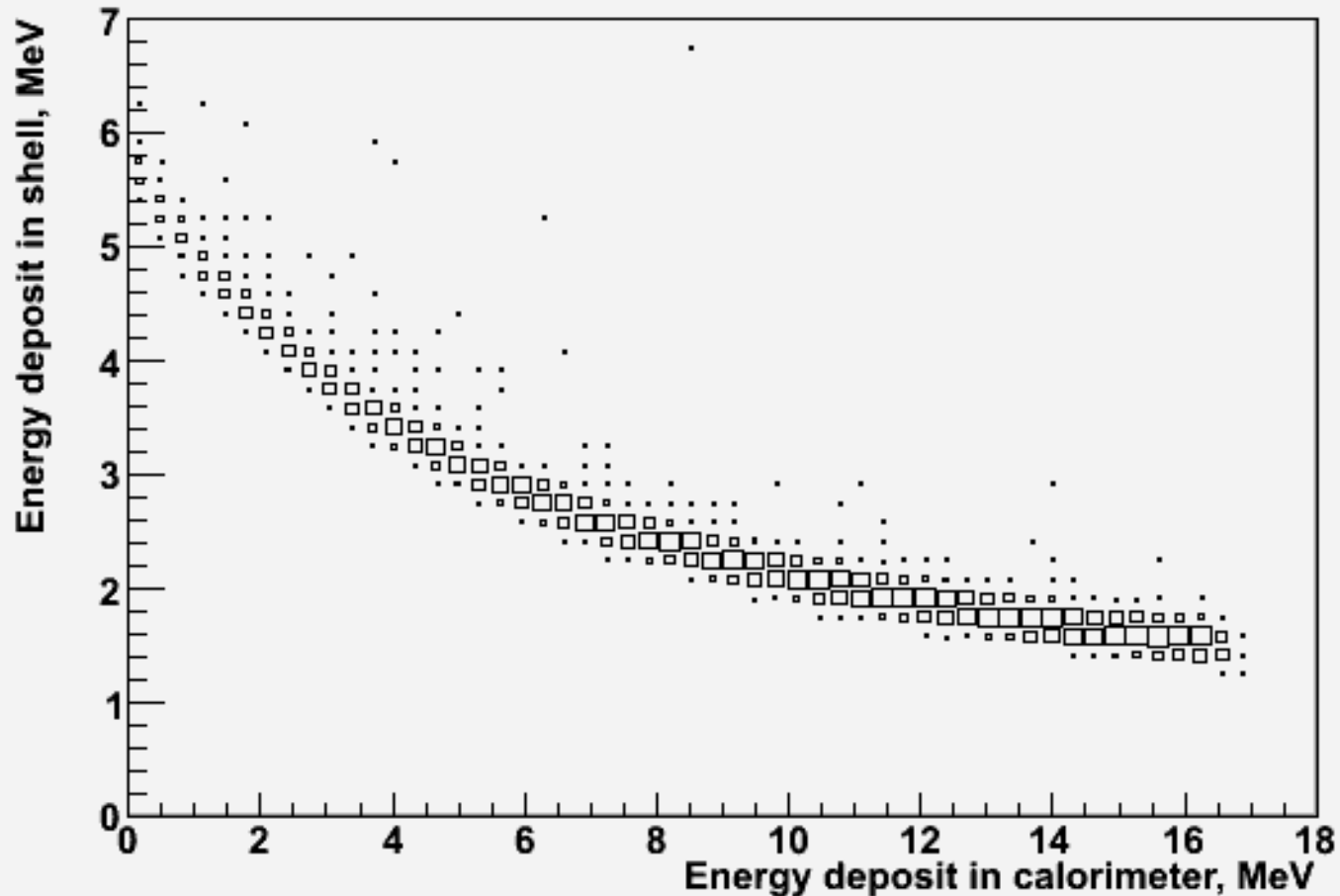
Energy Measurement

Region C, two layers + shell + calo: protons



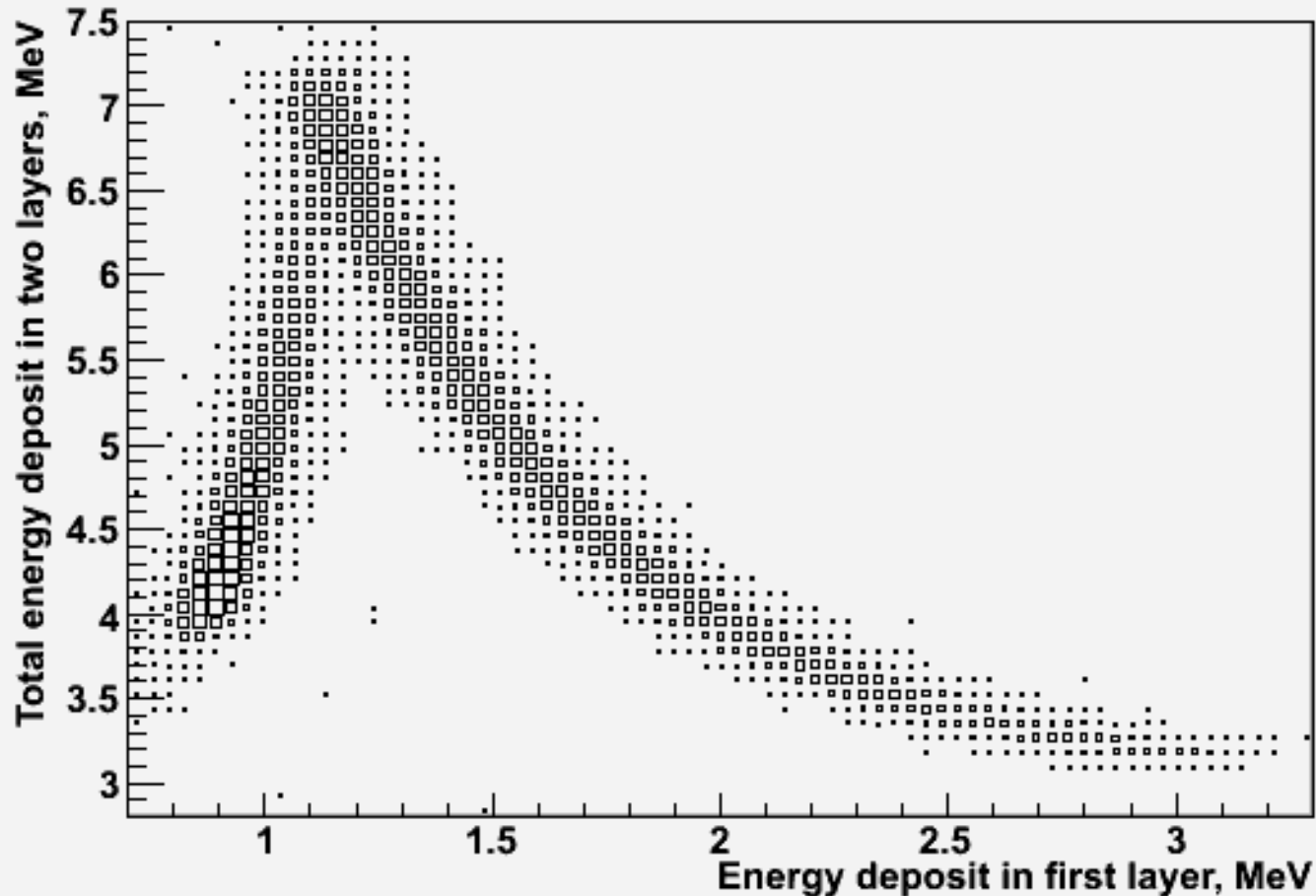
Energy Measurement

Region C, two layers + shell + calo: protons



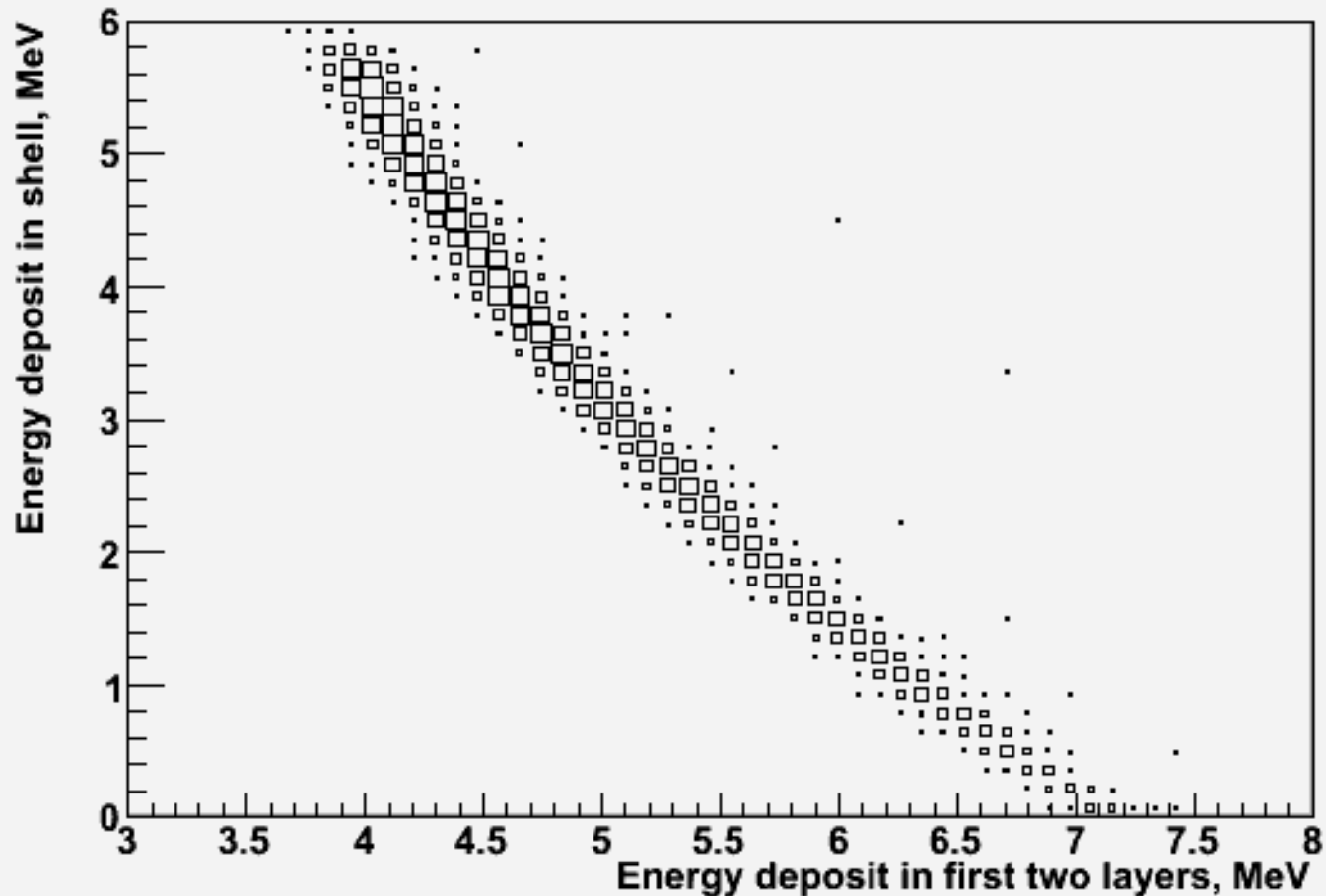
Energy Measurement

Region C, 2 layers (0.1, 0.3 mm) + shell (0.1 mm): protons



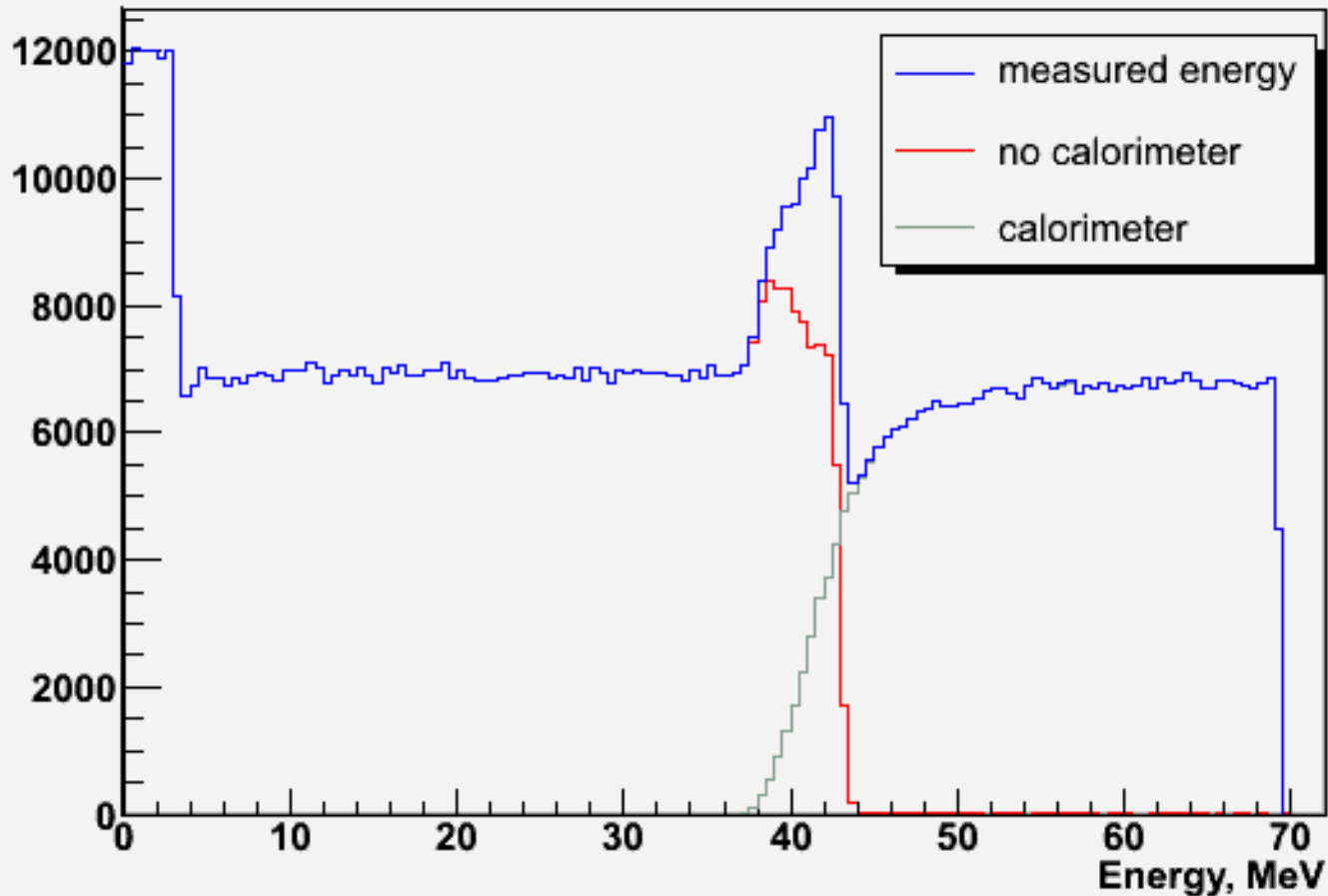
Energy Measurement

Region C, two layers + shell: protons



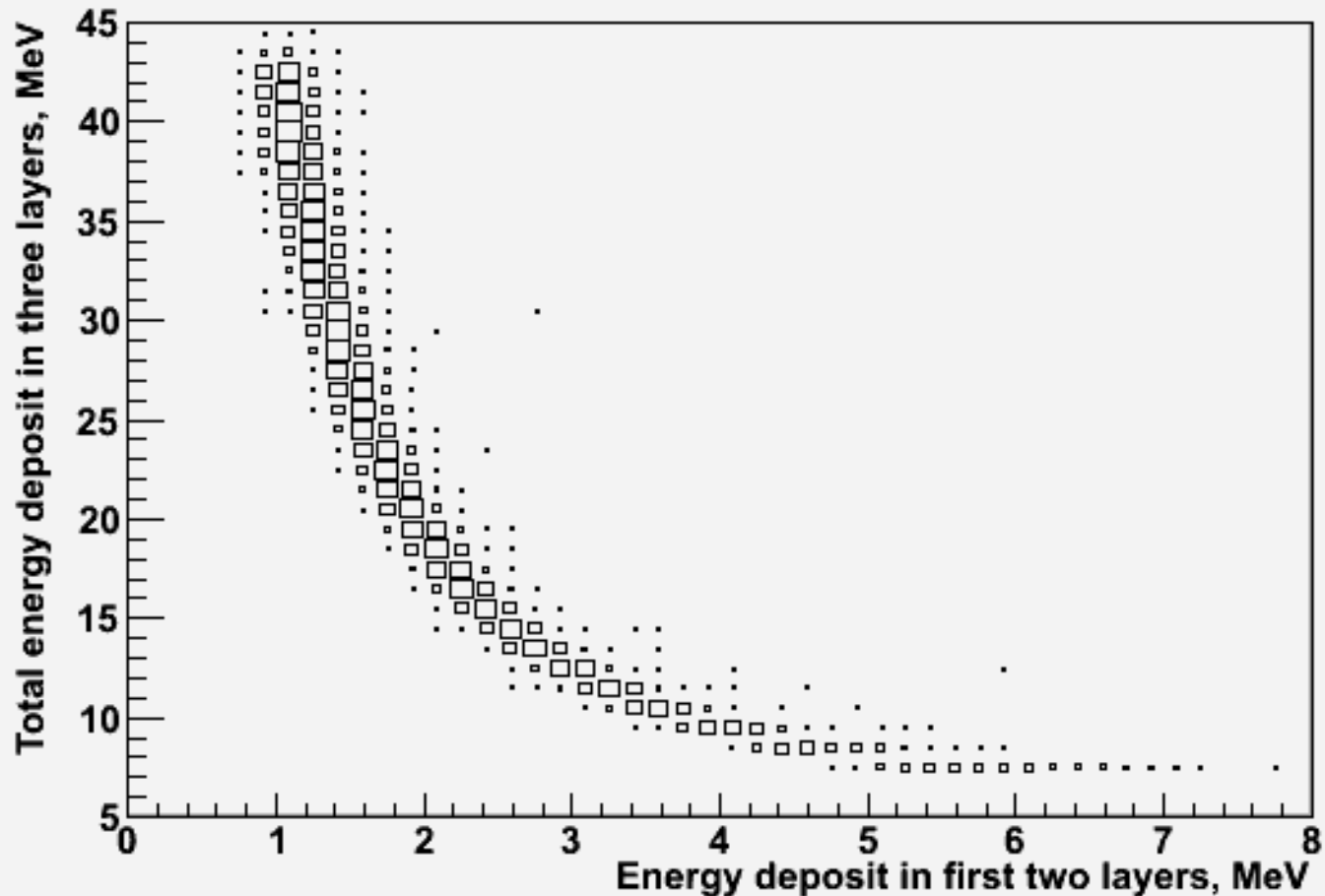
Energy Measurement

Region D, three layers + shell + calo: protons



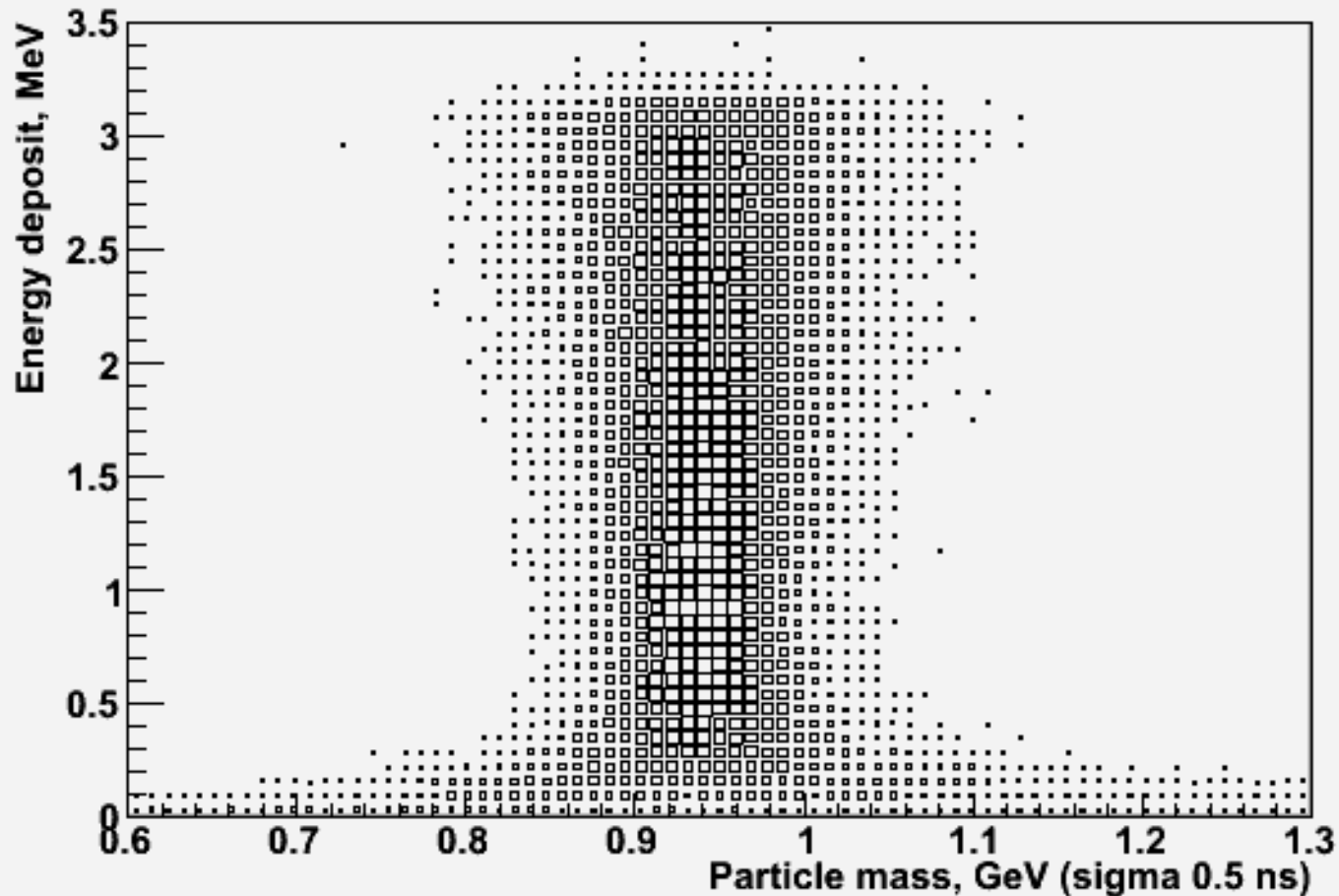
Energy Measurement

Region D, three layers + shell: protons



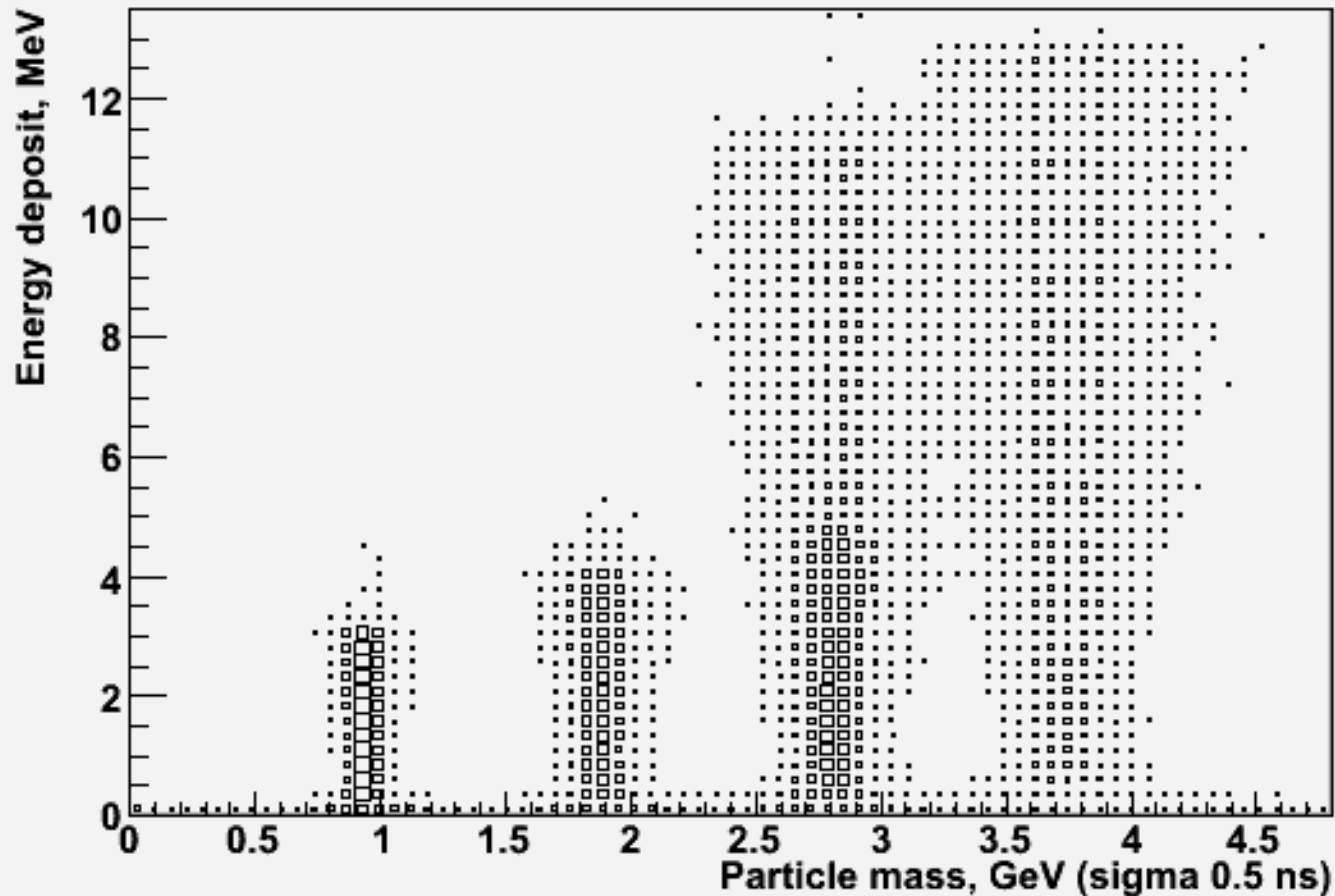
Particle Identification

Region C, first layer (0.1 mm): protons



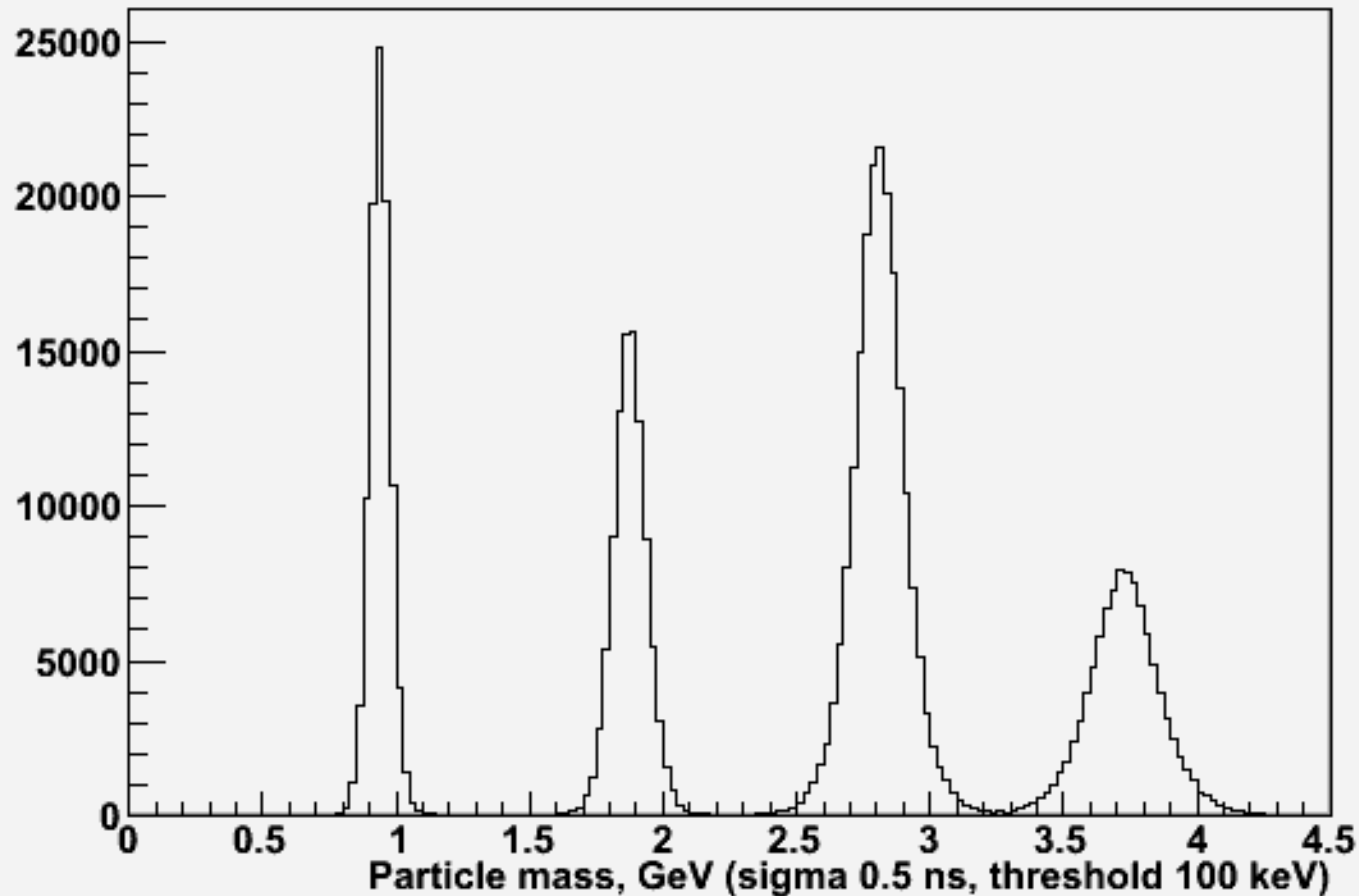
Particle Identification

Region C, first layer (0.1 mm): protons, deuterons, tritons, He3, He4



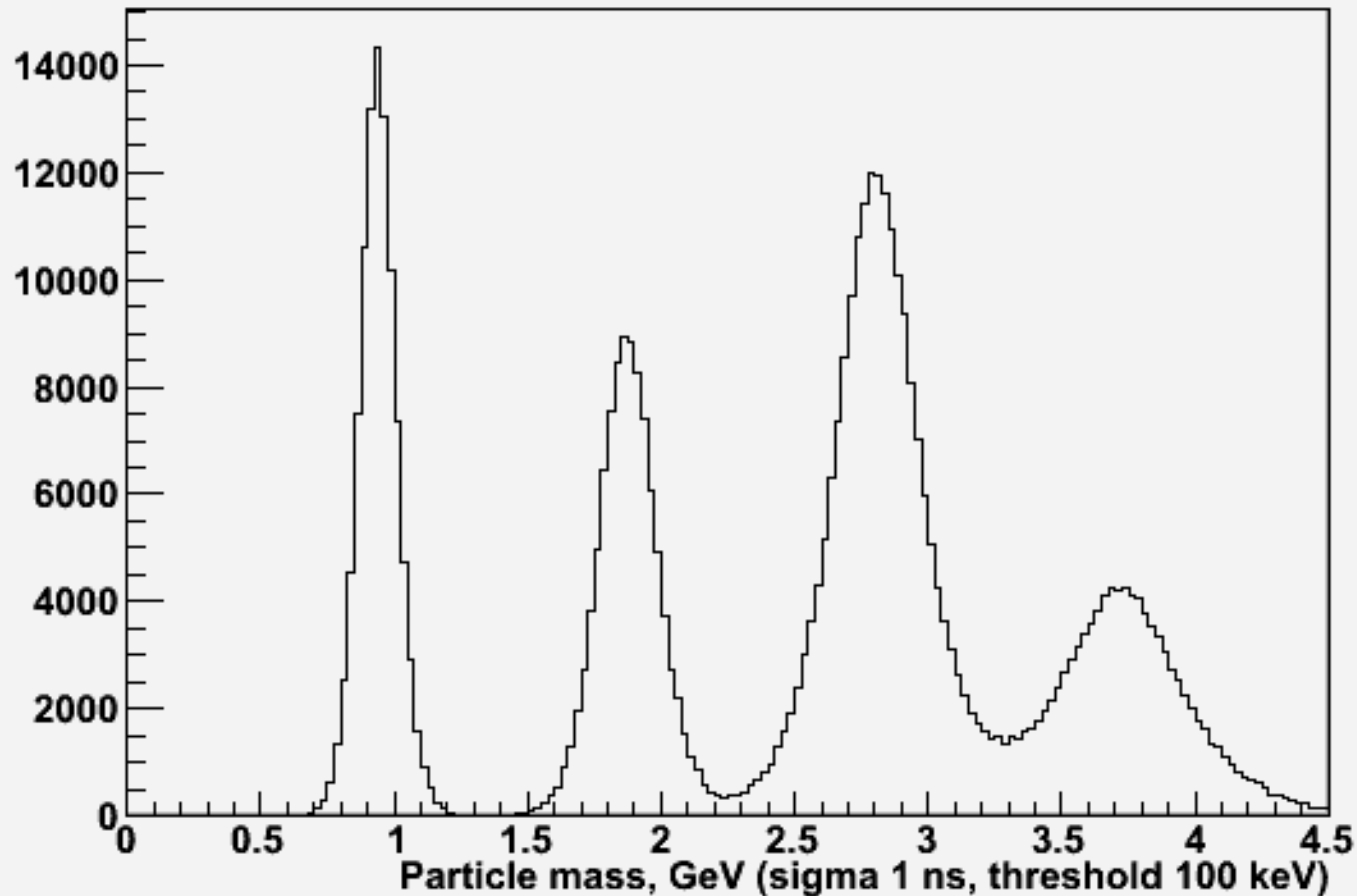
Particle Identification

Region C, first layer (0.1 mm): protons, deuterons, tritons, He3, He4



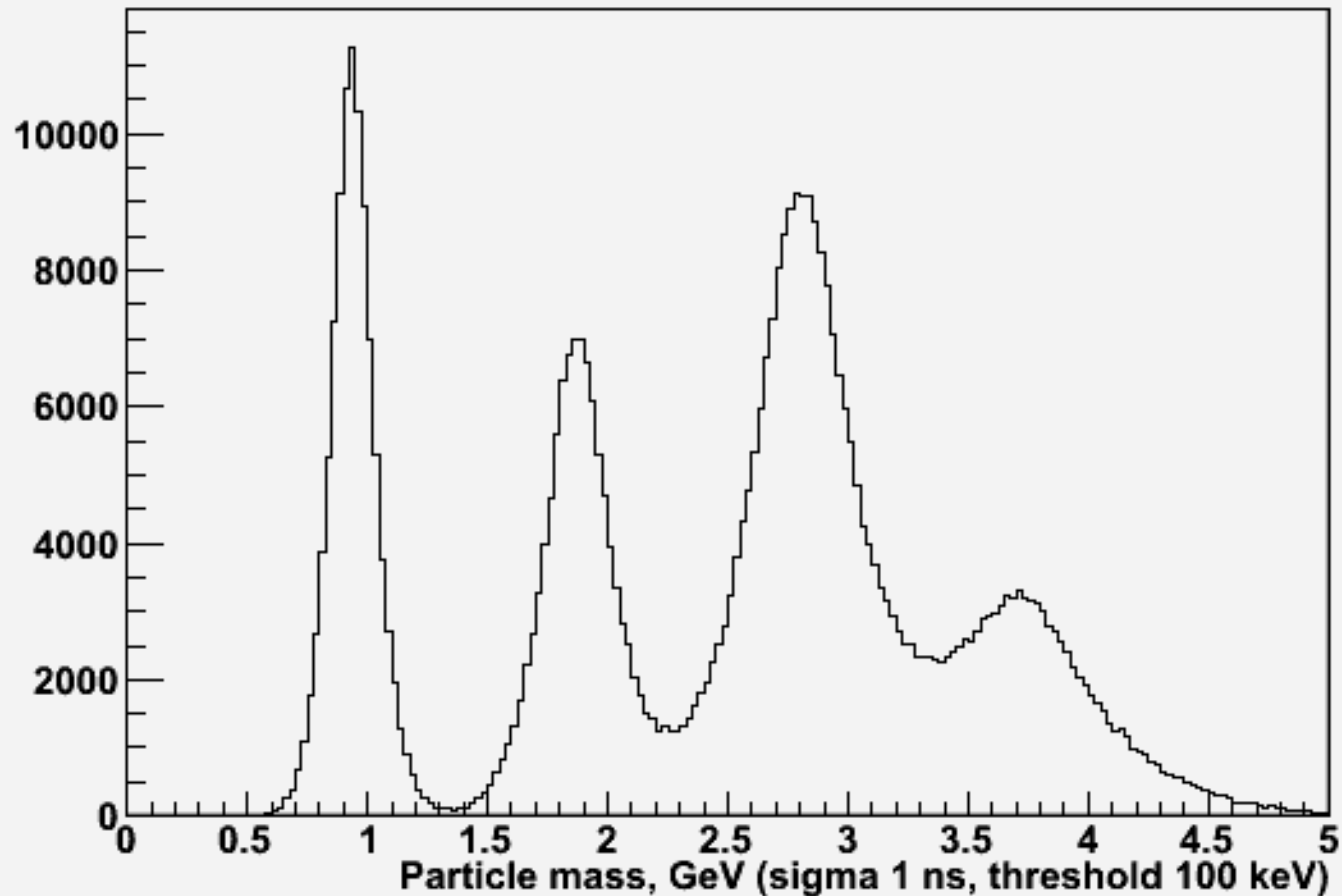
Particle Identification

Region C, first layer (0.1 mm): protons, deuterons, tritons, He3, He4



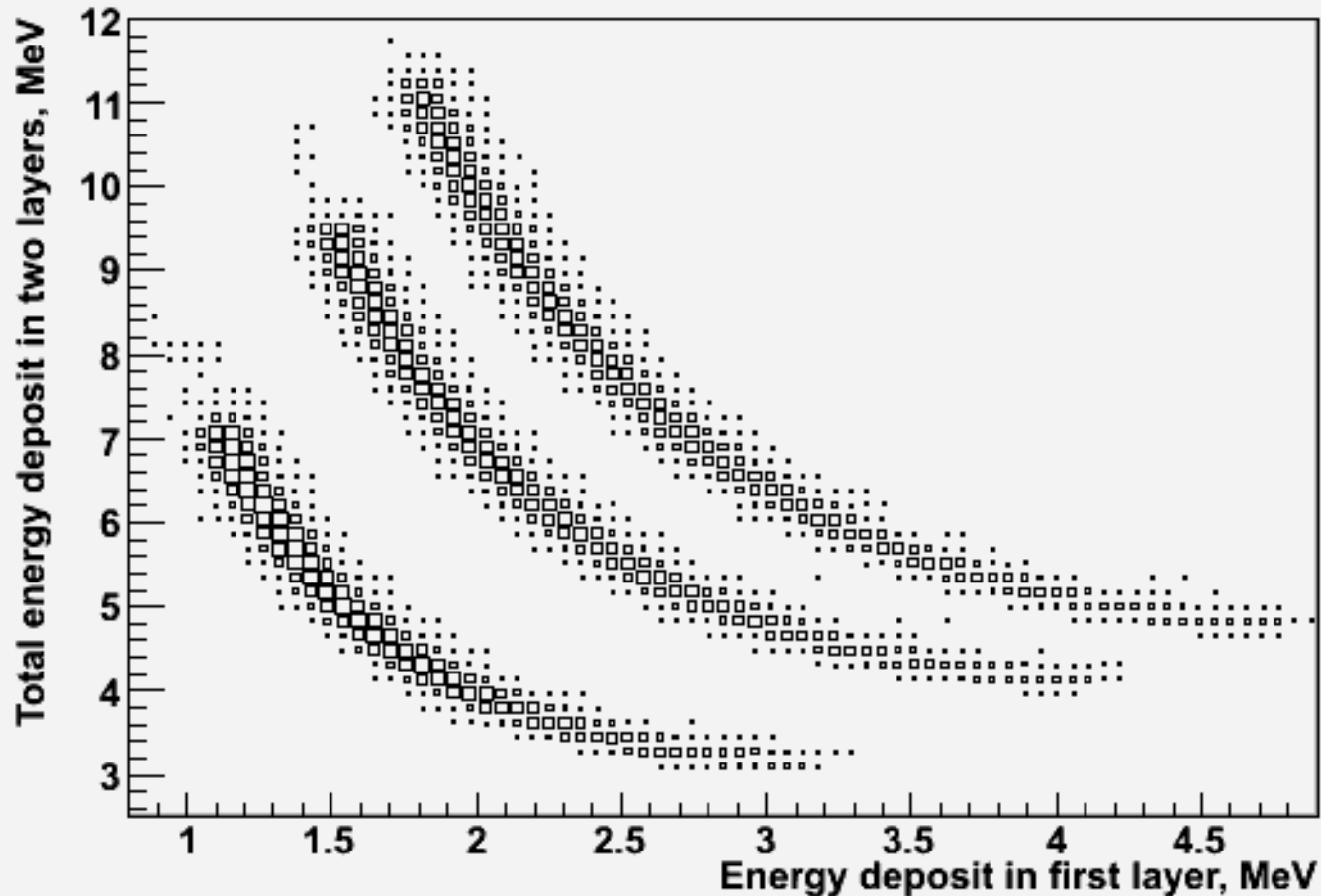
Particle Identification

Region B, first layer (0.3 mm): protons, deuterons, tritons, He3, He4



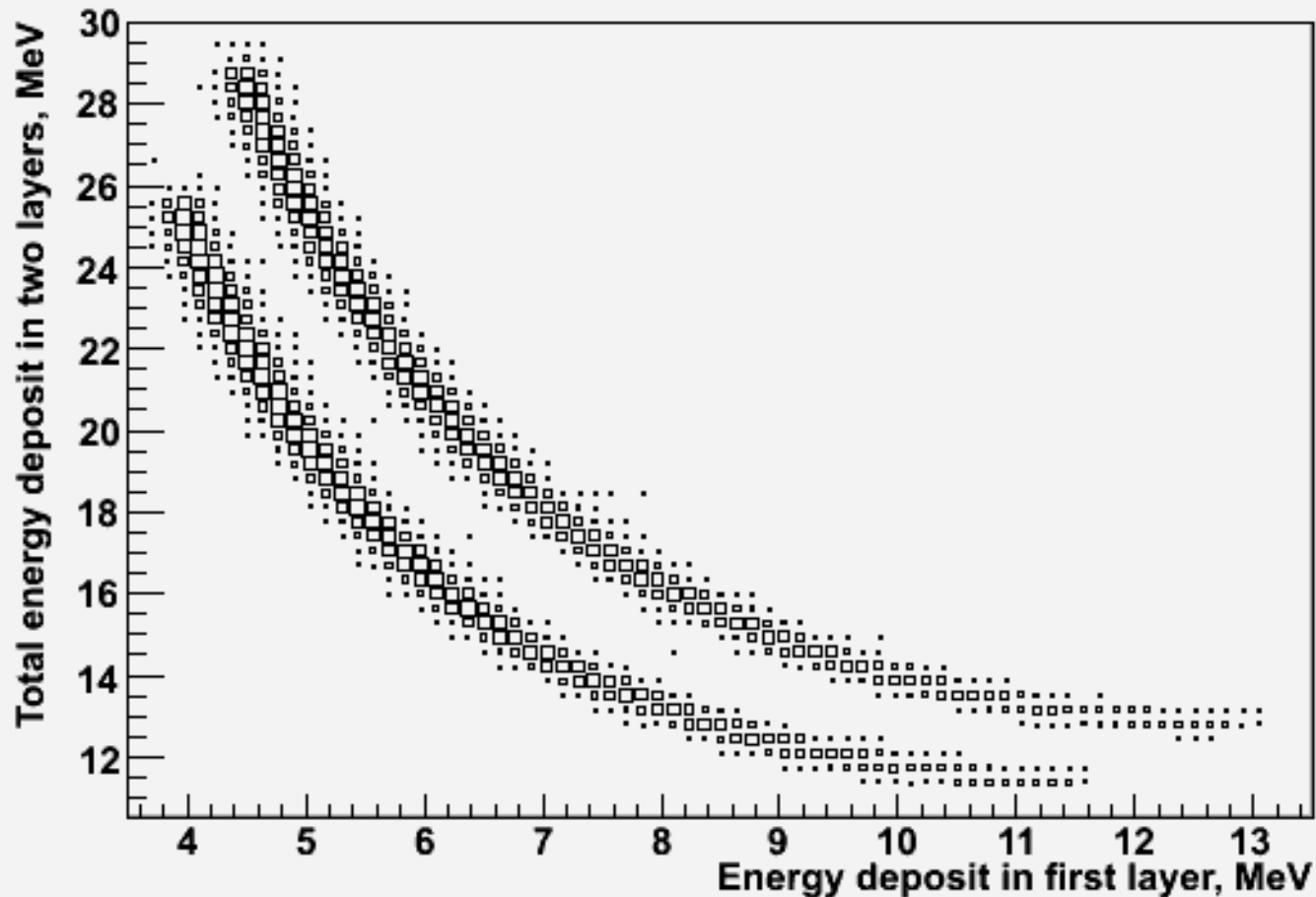
Particle Identification

Region C, two layers (0.1 mm, 0.3 mm): protons, deuterons, tritons



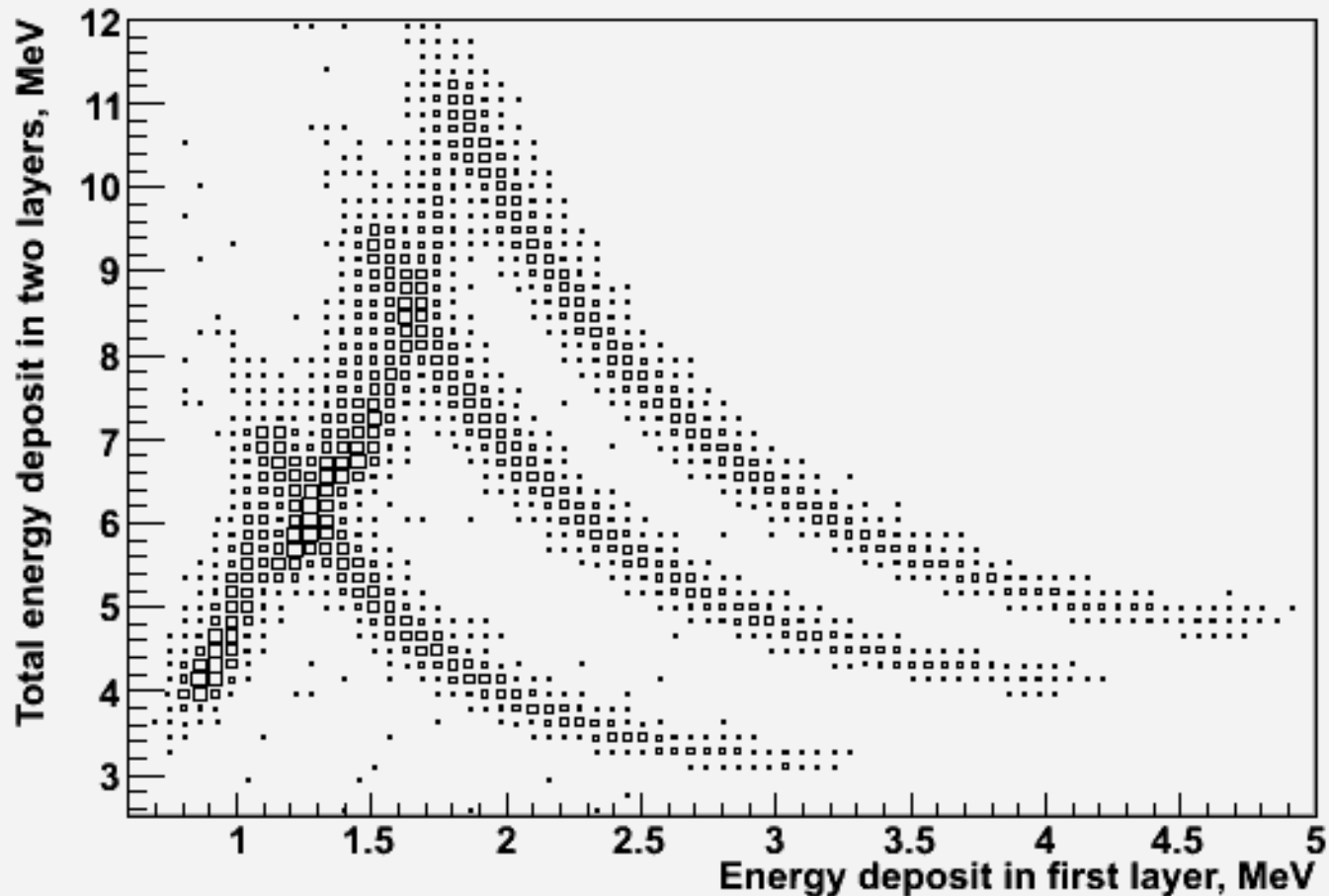
Particle Identification

Region C, two layers (0.1 mm, 0.3 mm): He3, He4



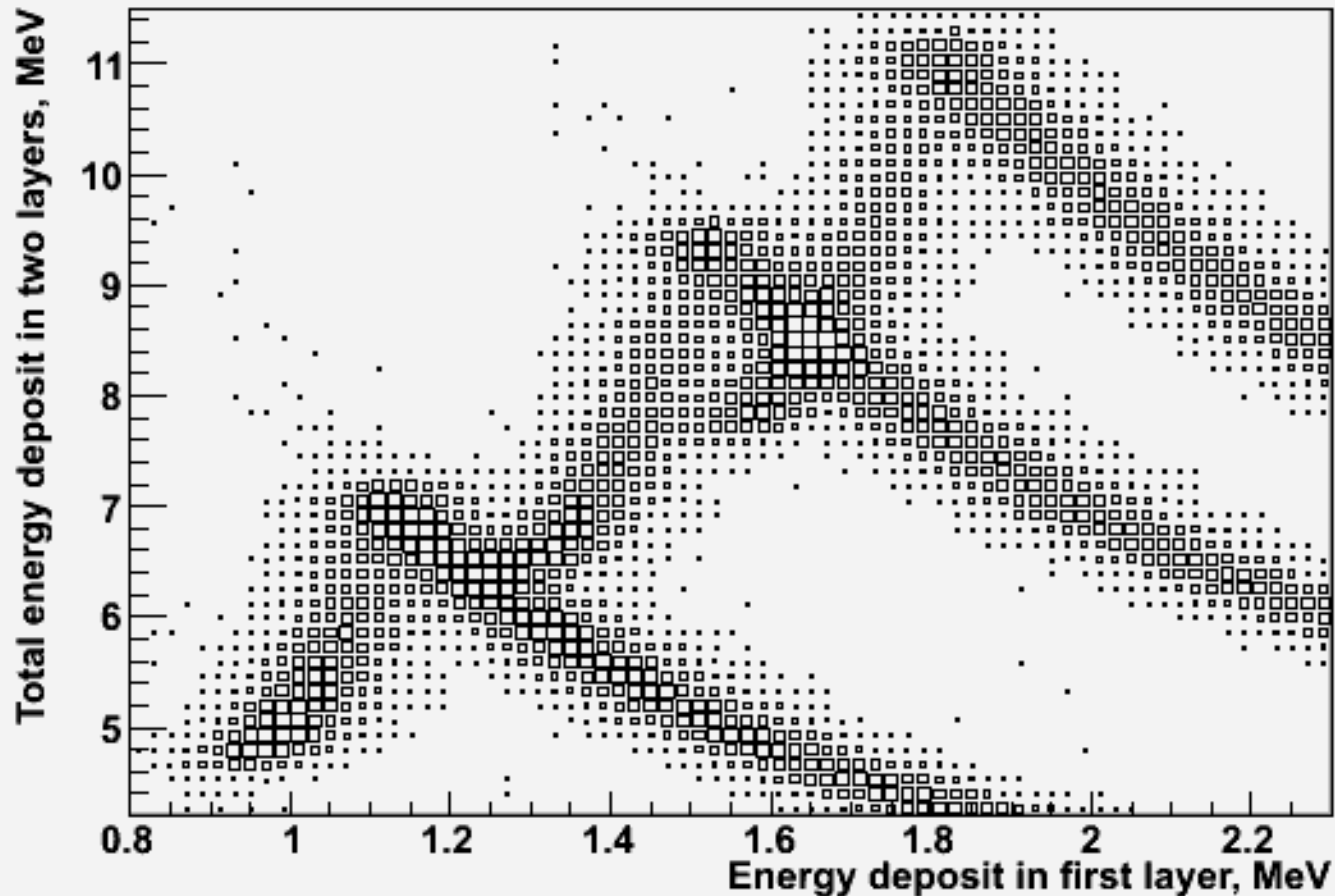
Particle Identification

Region C, 2 layers (0.1, 0.3 mm) + shell (0.1 mm): p, d, t



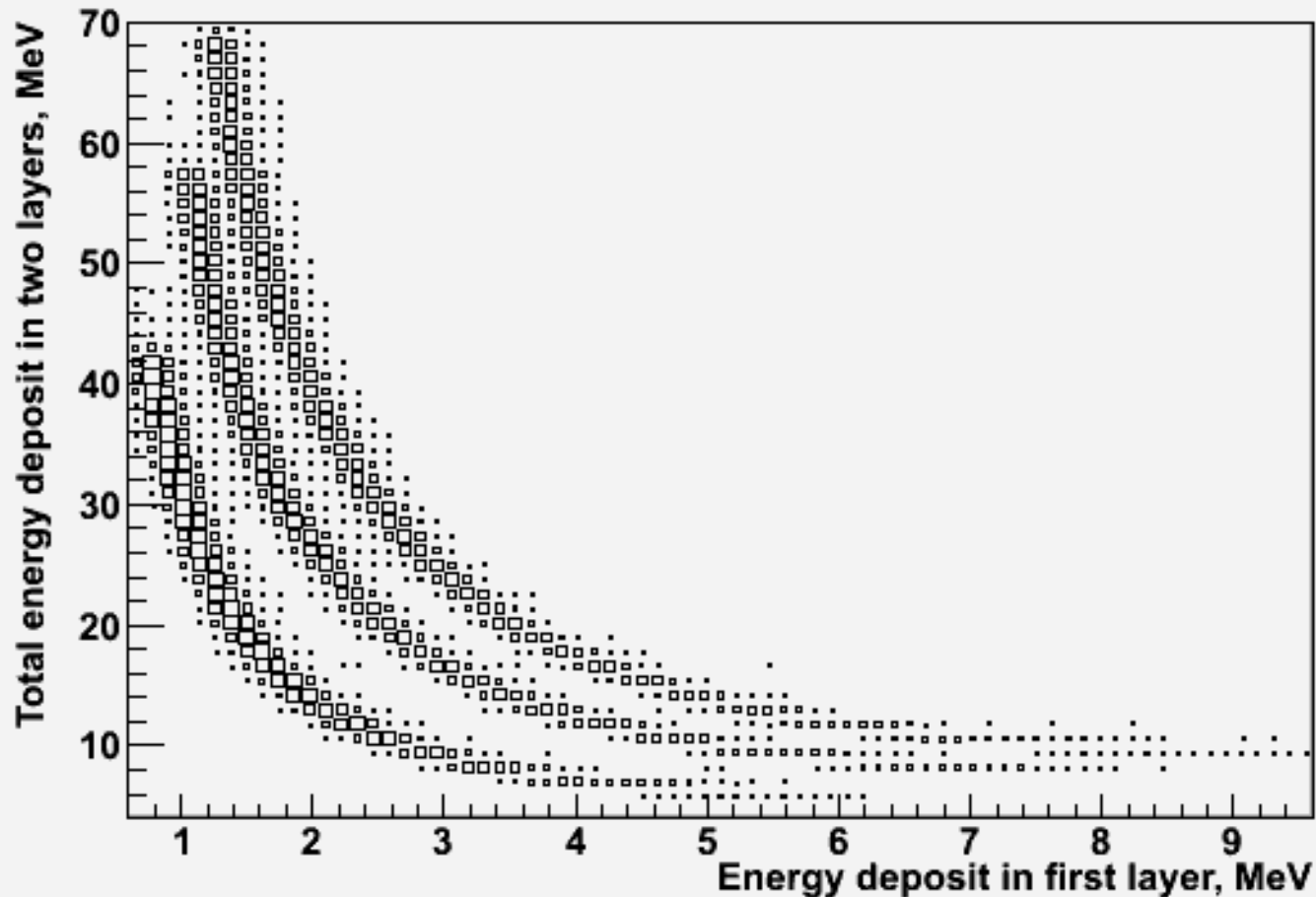
Particle Identification

Region C, 2 layers (0.1, 0.3 mm) + shell (0.05 mm): p, d, t



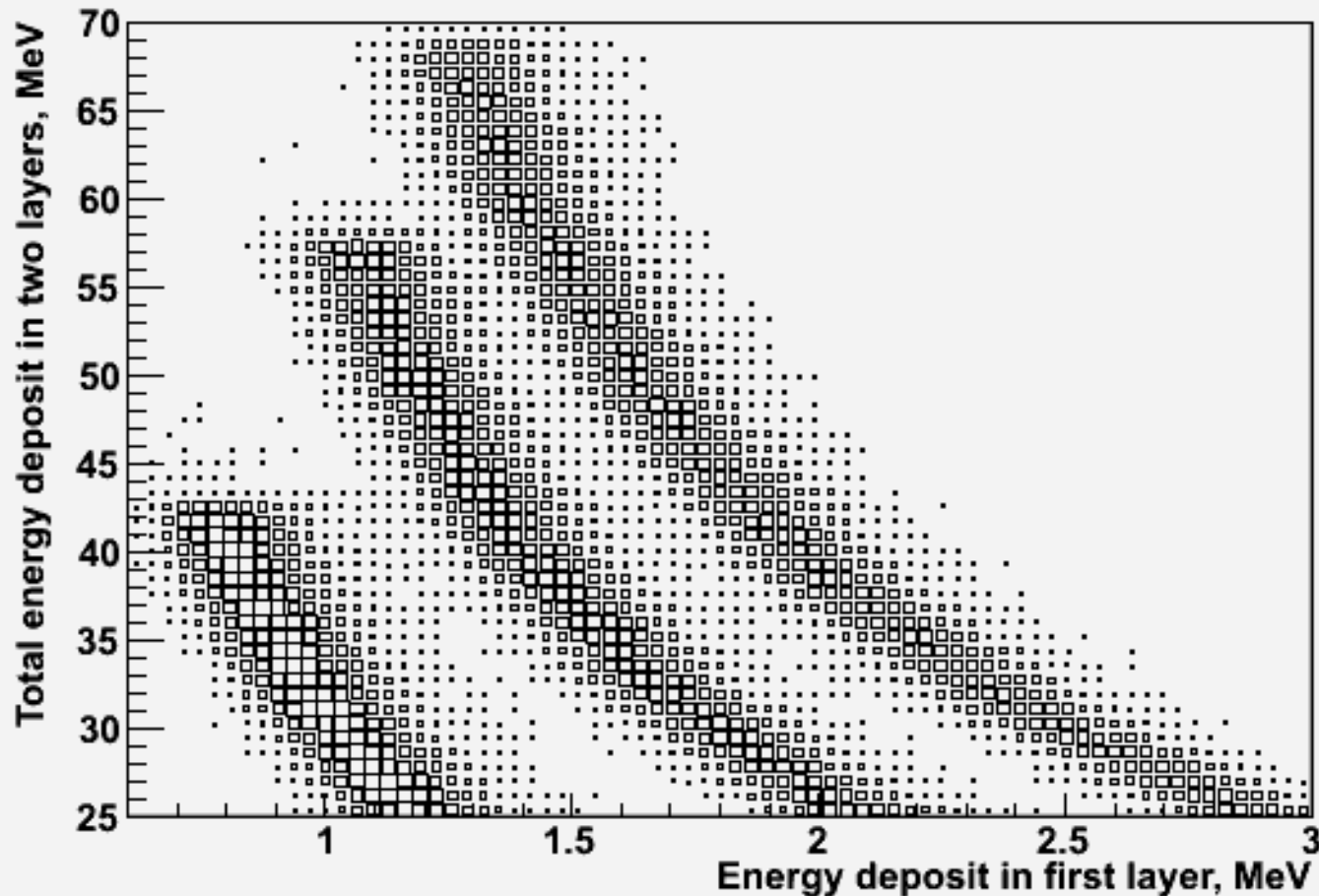
Particle Identification

Region A, 2 layers: protons, deuterons, tritons



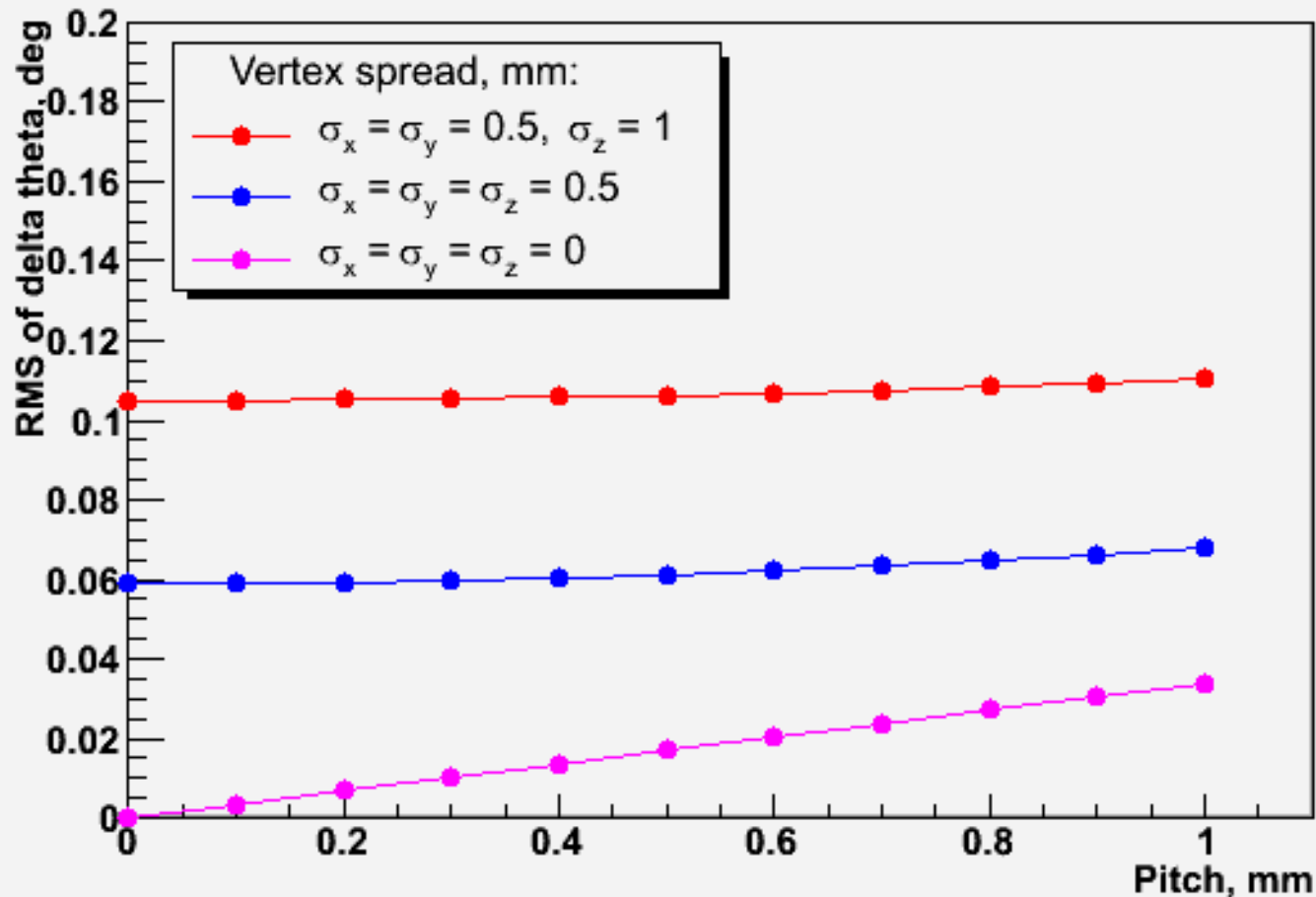
Particle Identification

Region A, 2 layers: protons, deuterons, tritons



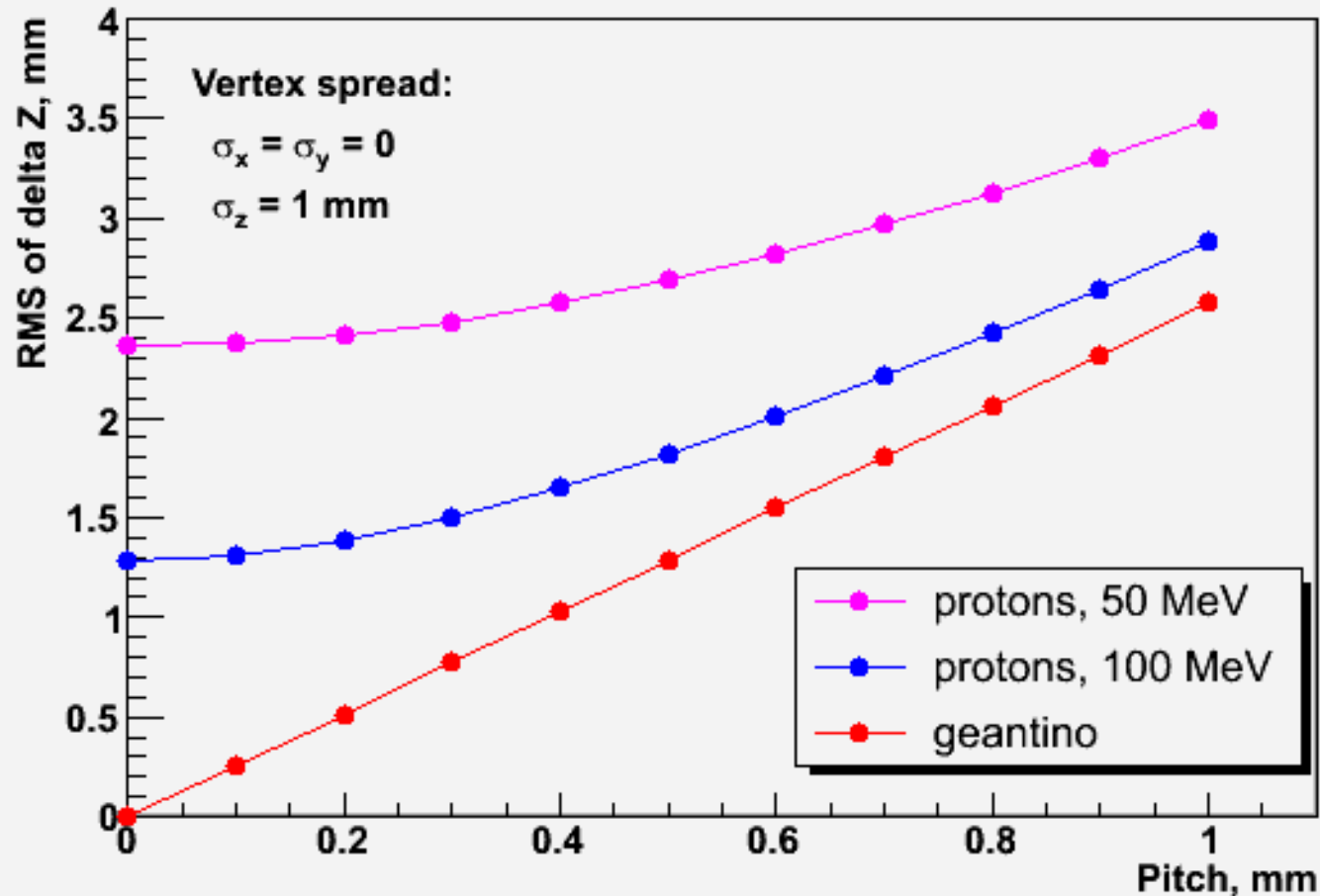
Angular Resolution

Region C, first layer: resolution in theta



Angular Resolution

Region C, two layers: extrapolation



Angular Resolution

Region C, two layers: geantino

