

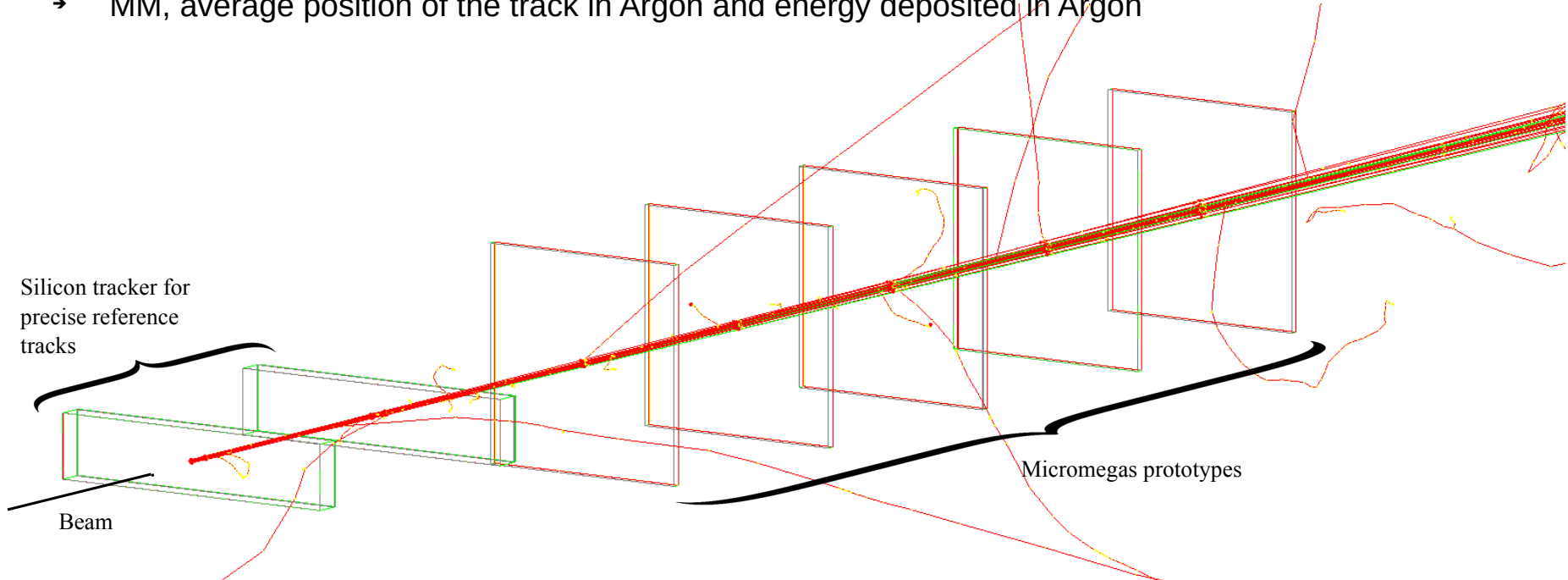
Beam Test Geant4 simulation update



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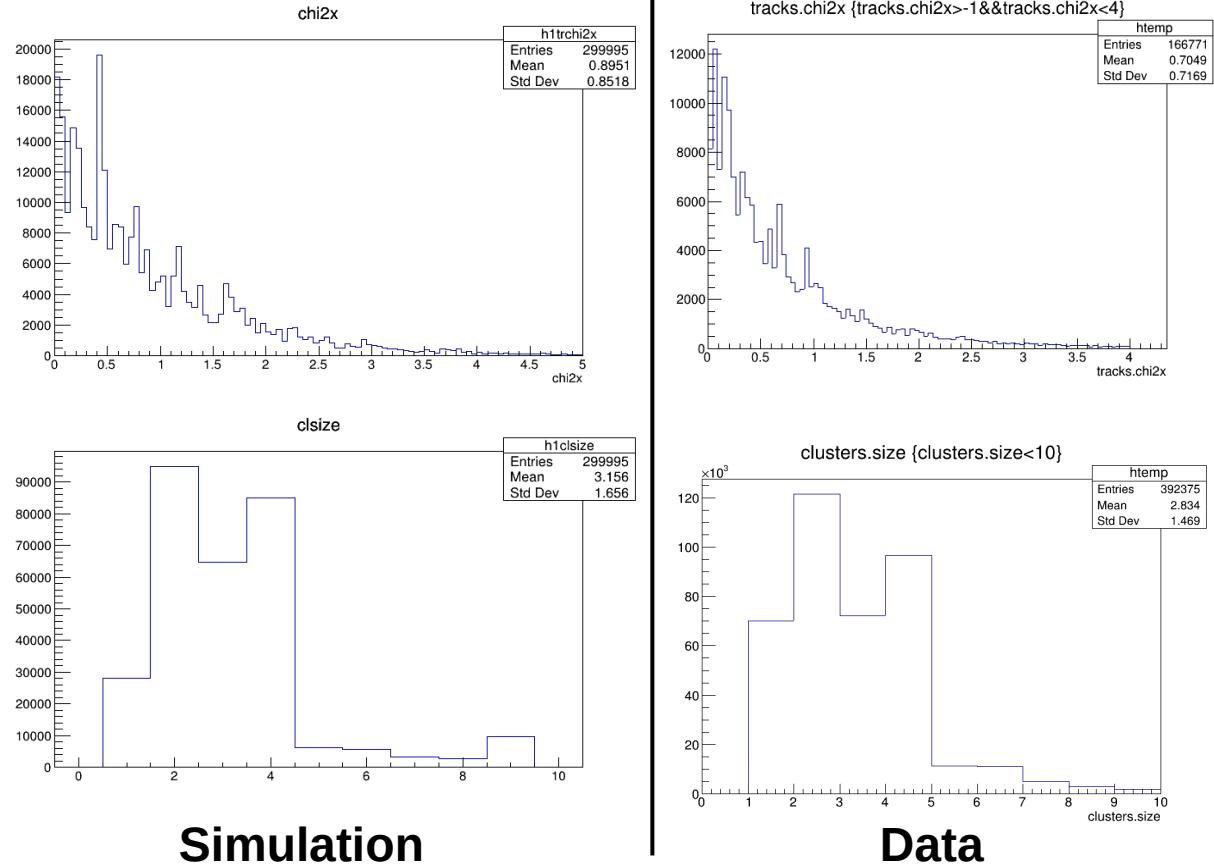
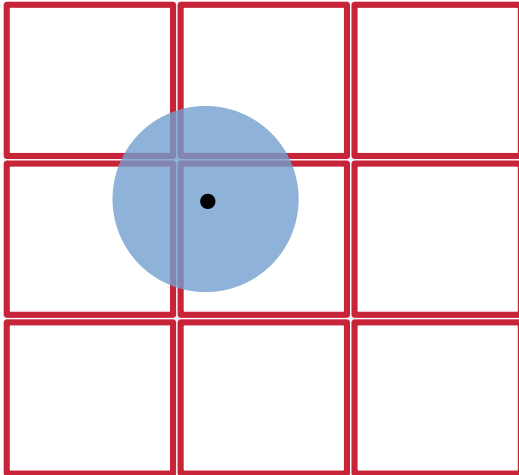
Introduction

- Beam test geometry implementation in Geant4
- For banco, materials and geometry taken from Alice MFT and Inner Tracker
- Output:
 - Banco, position of the primary track and energy deposited on the sensor of each ladder
 - MM, average position of the track in Argon and energy deposited in Argon



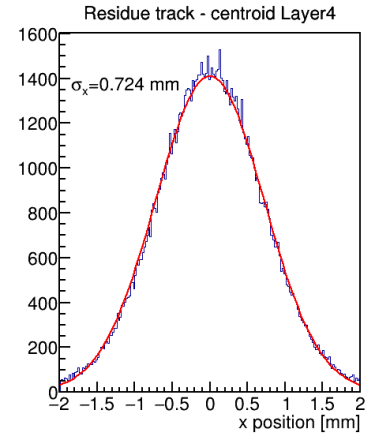
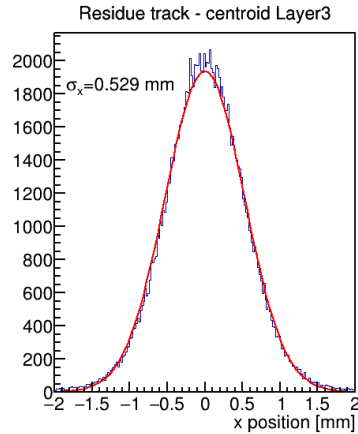
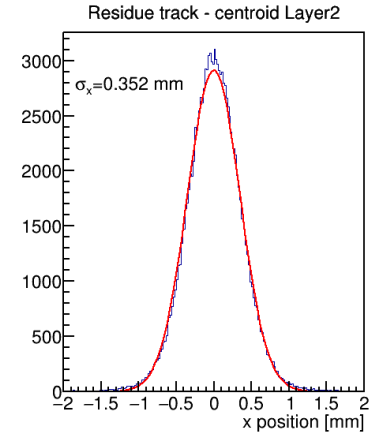
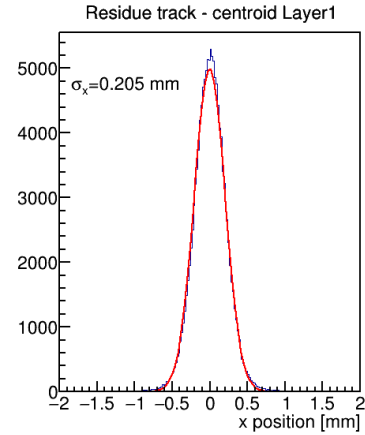
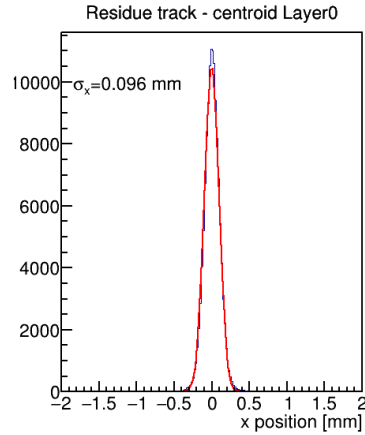
Banco model

- To make build a more realistic track, for each banco ladder we define a circle of radius $cste \cdot Edep$ centered on the real track position
- If the circle overlaps a pixel, the pixel is fired and added to the cluster
- To have size 3 clusters, extra condition on corner pixels. The signal must reach more than $2\mu m$ inside the pixel.



Residues with perfect Micromegas

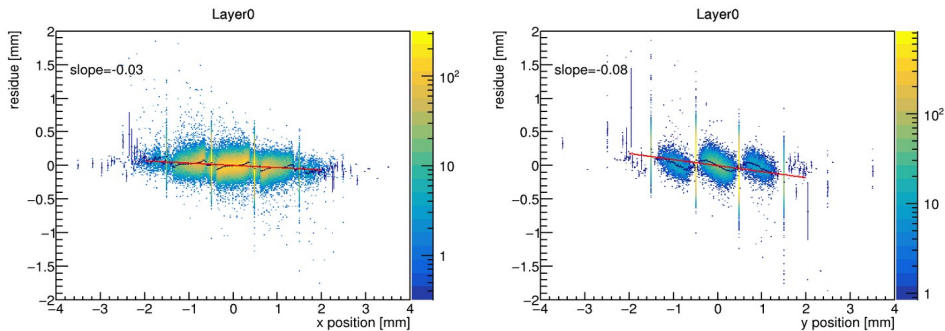
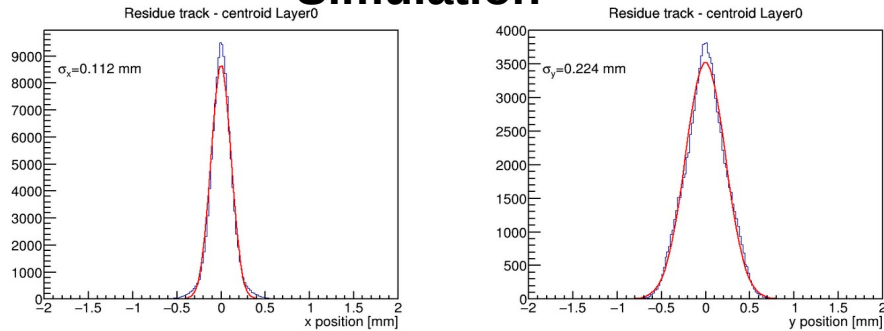
- Shows the multiple scattering contribution



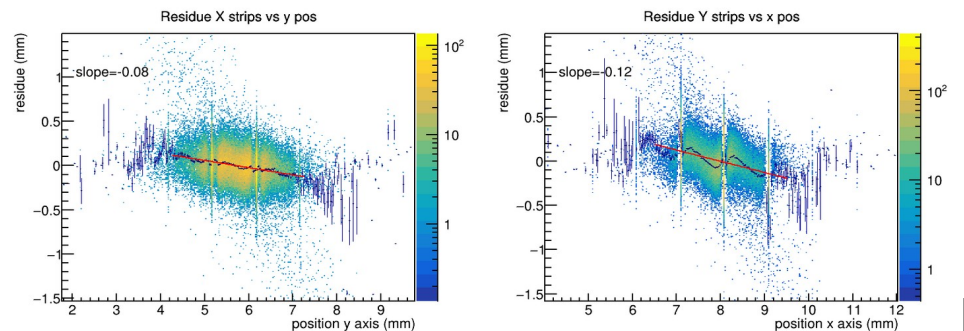
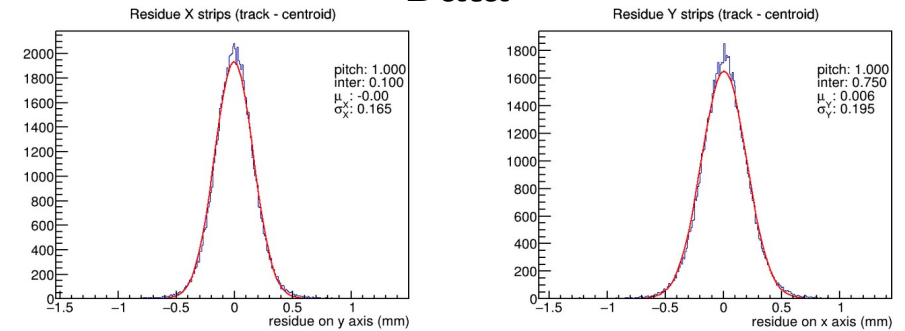
Micromegas model

- The signal on the readout plane is modeled by a 2D gaussian centered at the average track position in the Argon.
- The Gaussian is scaled such that its integral=Edep
- The function is integrated over each strip. If the integral is above a set threshold the strip is fired and added to the cluster.
- 2 free parameters: Sigma; The strips threshold = $0.1 * \text{median}(Edep)$

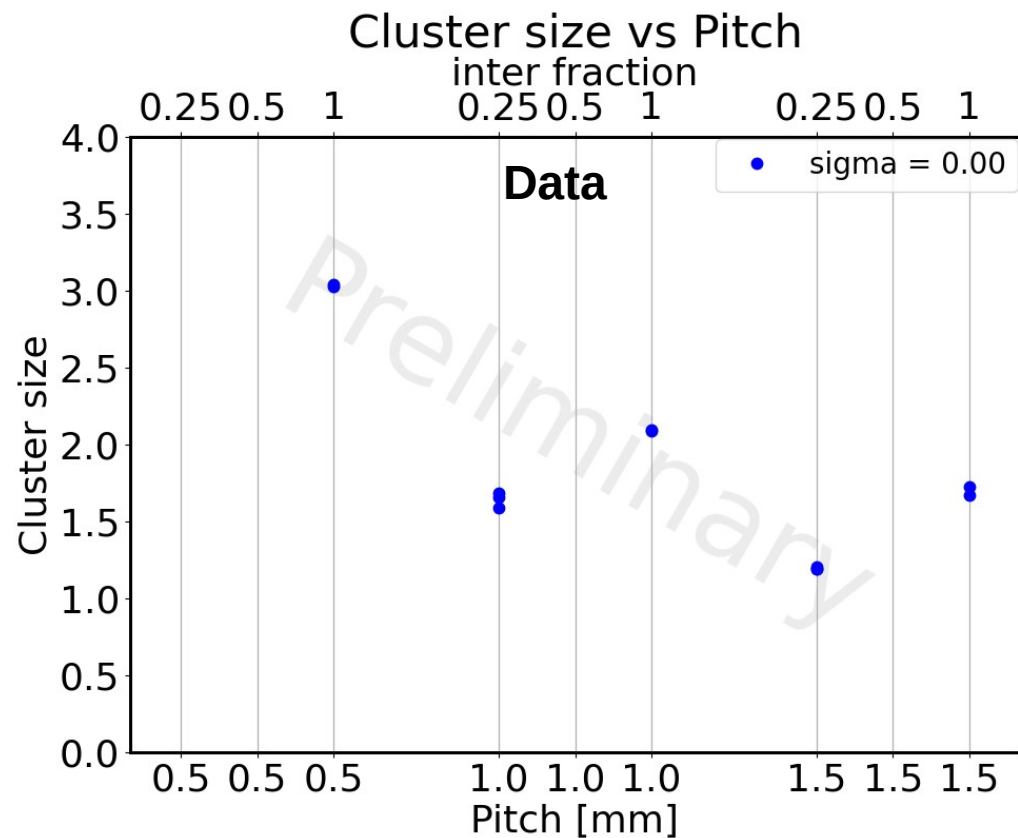
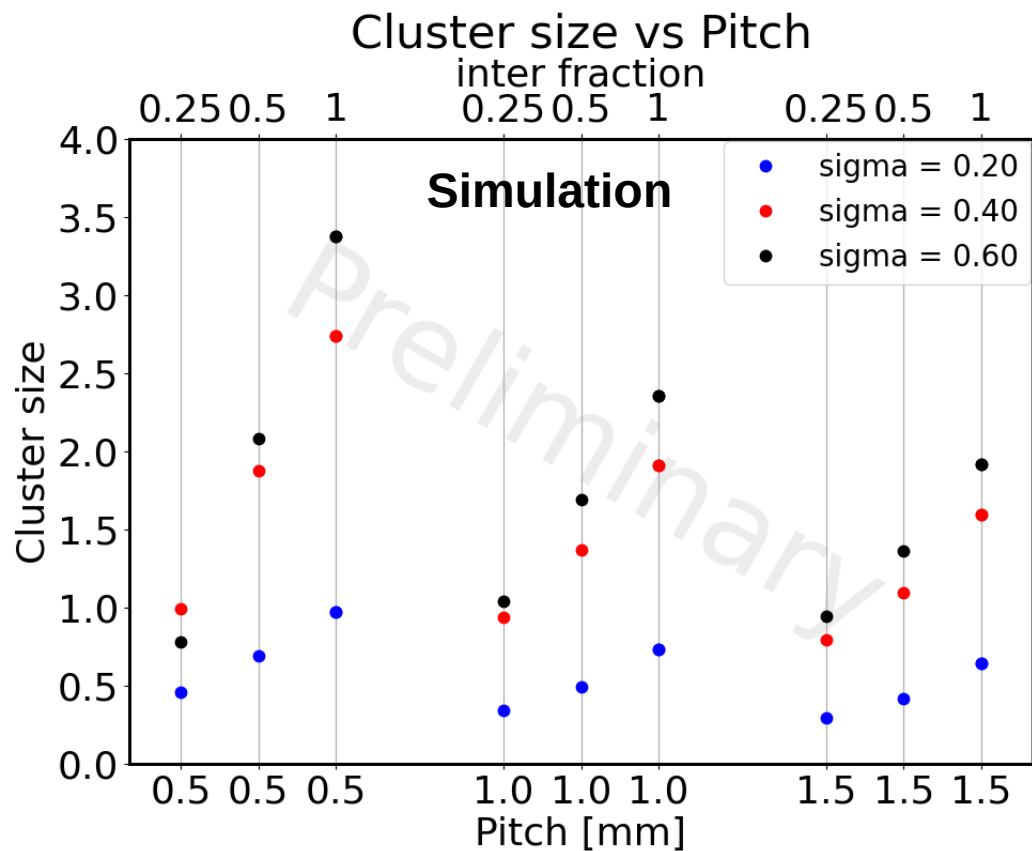
Simulation



Data



Choosing the gaussian sigma



Choosing the gaussian sigma

