

# Beam monitoring with ECAL only?

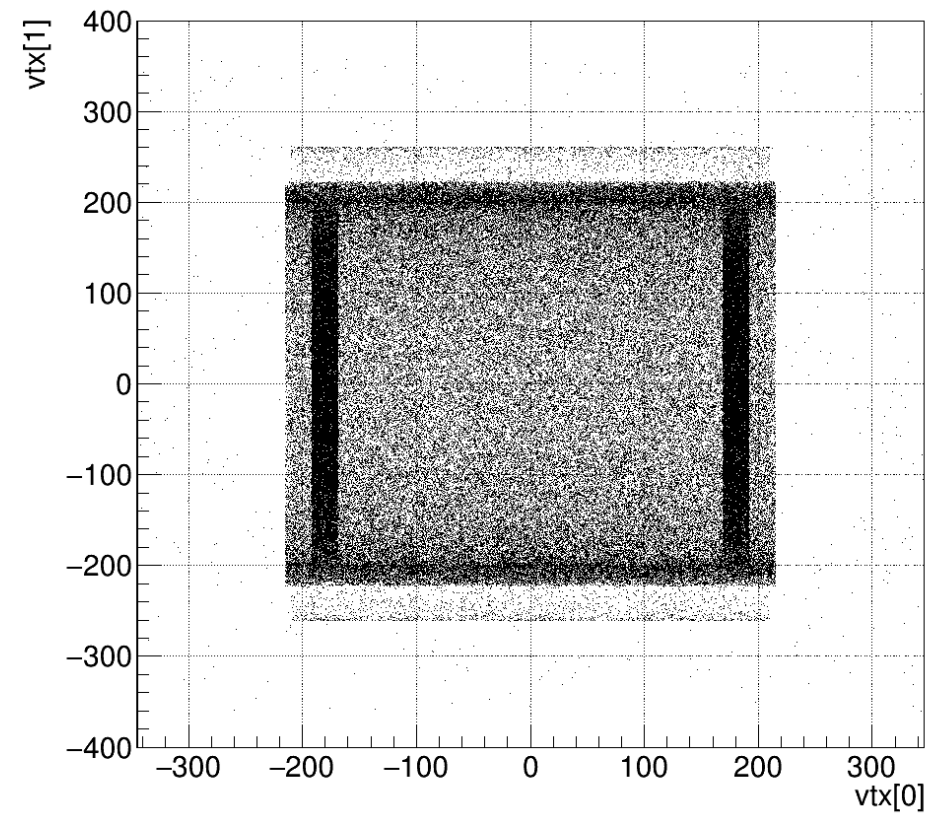
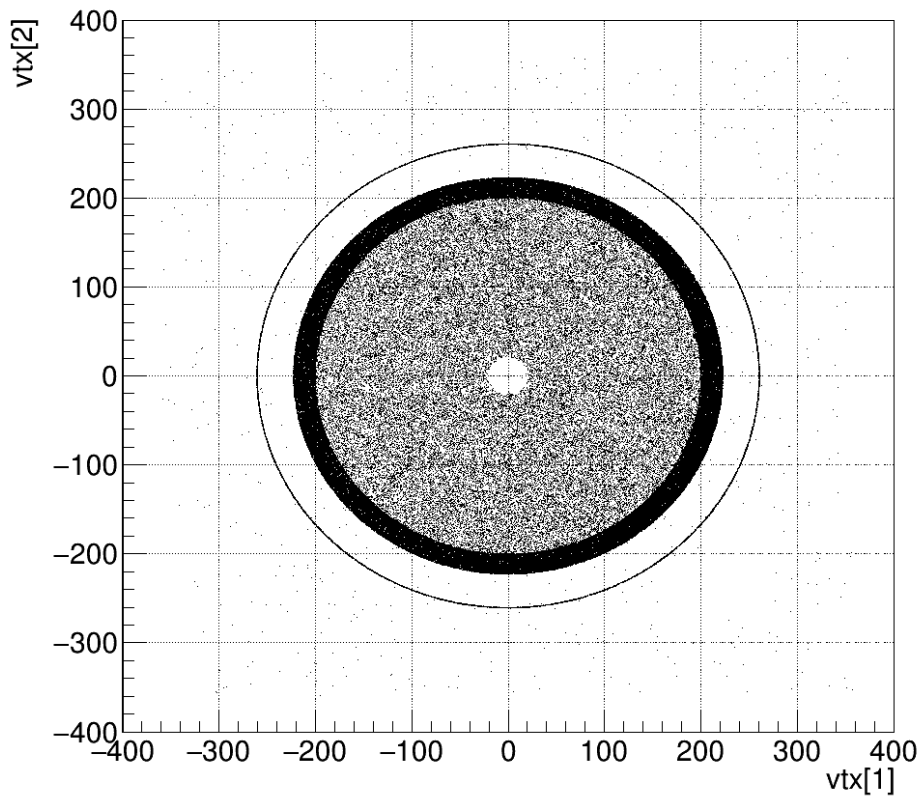
Guang Yang

# Introduction

- Stage 1 in LBNC's mind might be only KLOE+ECAL
- Spokes would like to check if ECAL can do the beam monitoring job
- Can we do beam monitoring with that?
  - From a quick look, I would say pretty likely, no → but worth try something fancier?

# Dedicated sample

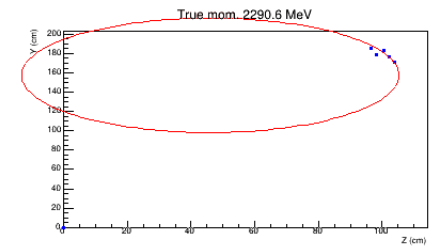
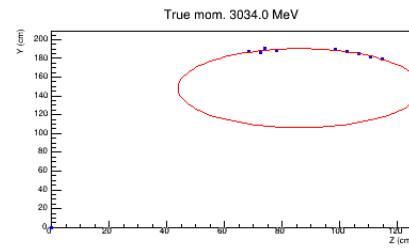
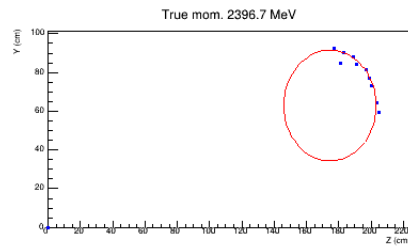
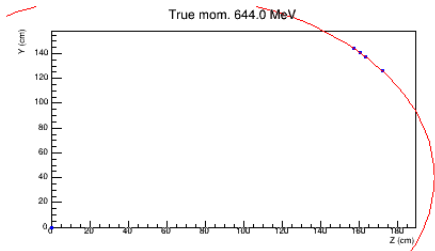
- Interactions only in the ECAL in KLOE



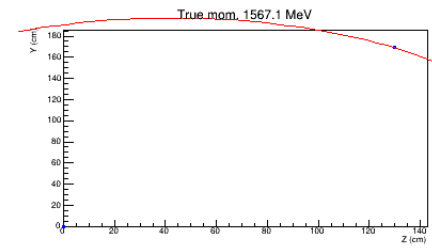
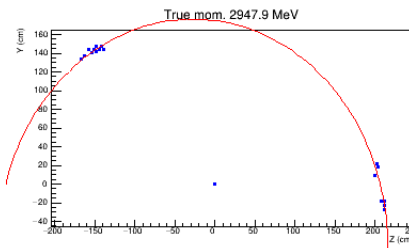
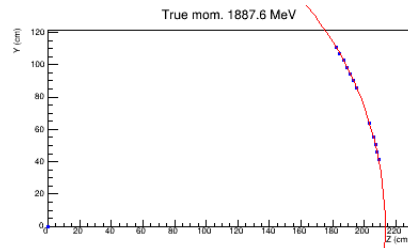
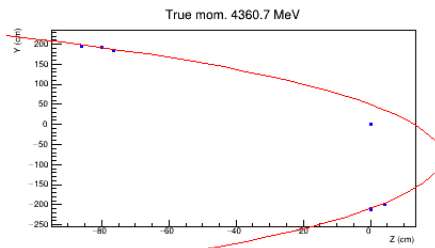
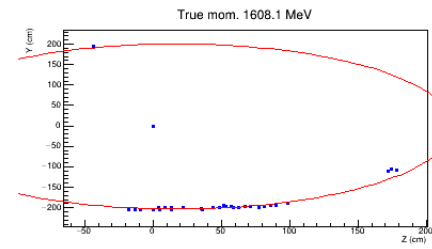
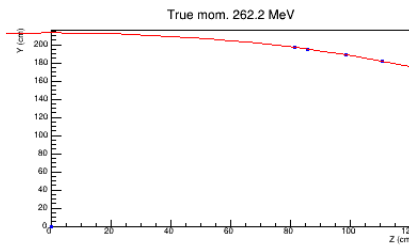
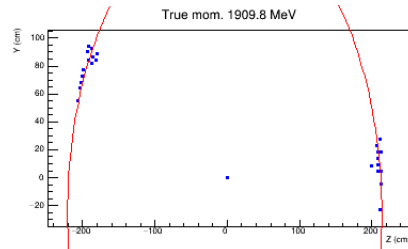
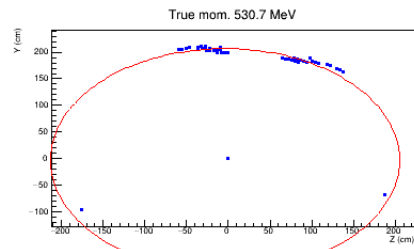
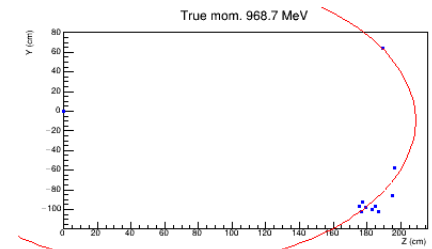
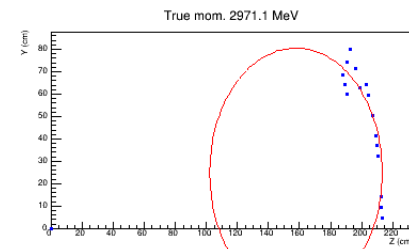
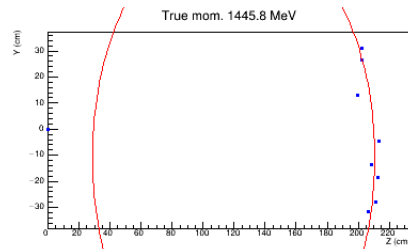
# Processing

- On the YZ plane, assume  $4.4 \text{ cm}^2$  square space cube (ECAL bar cross section size) and corresponding spatial resolution
- Applied 0.6 T B-field
- Fit circle on the YZ plane

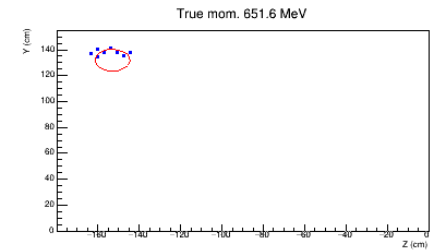
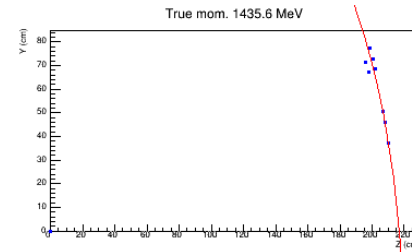
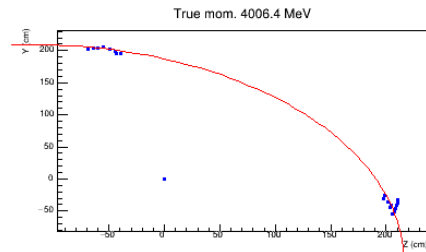
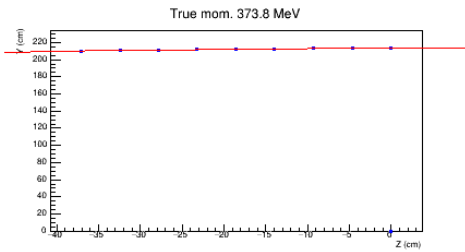
# Fitting the curves with those discrete hits



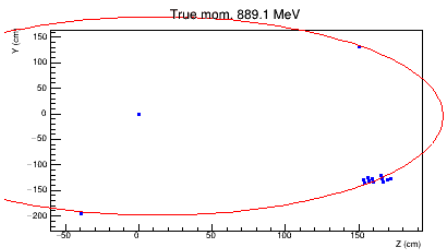
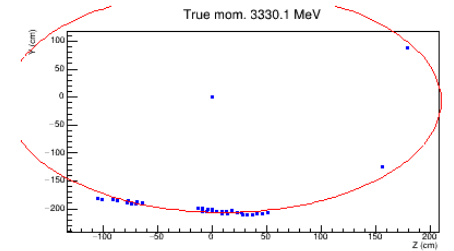
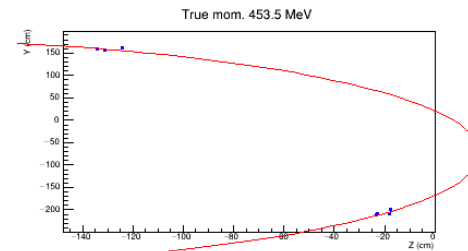
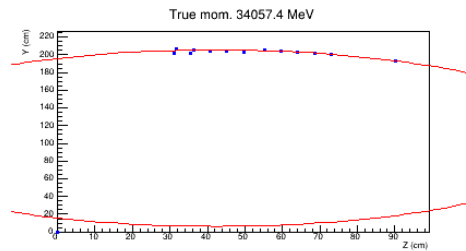
Failed fit



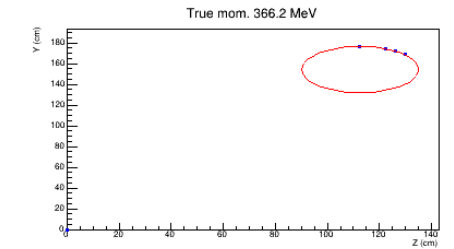
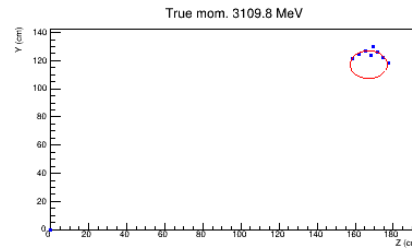
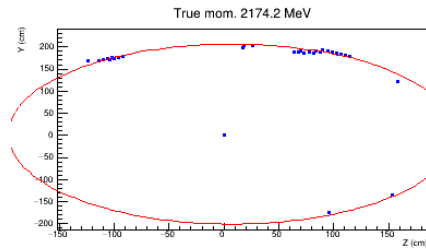
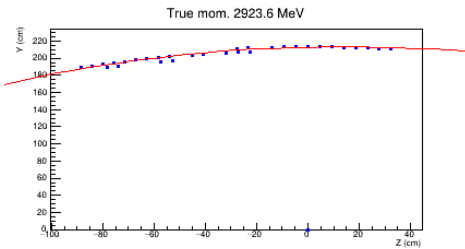
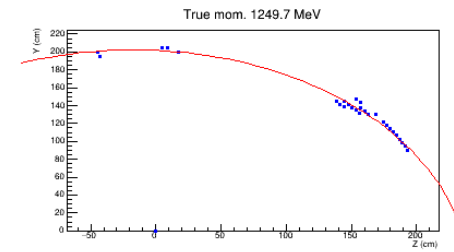
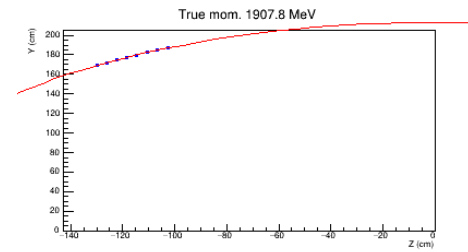
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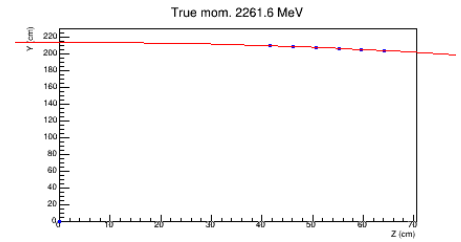
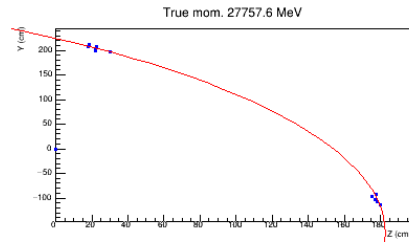
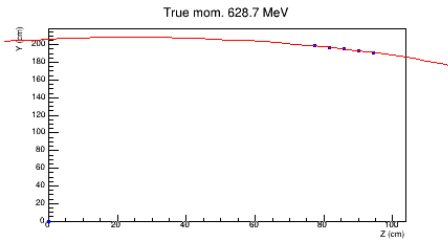
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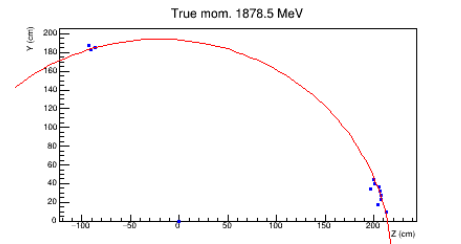
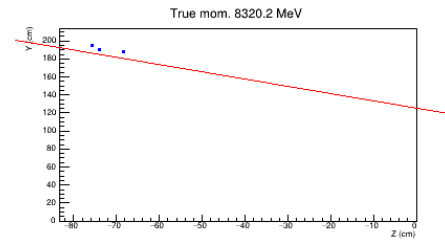
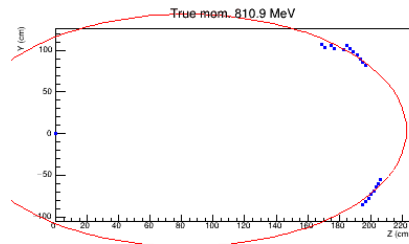
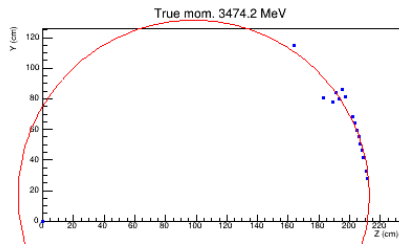
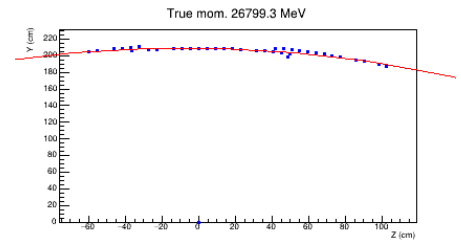
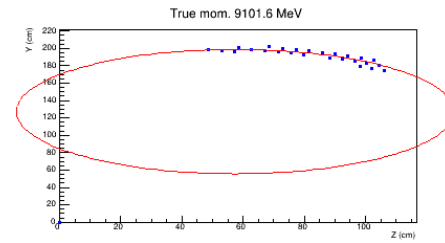
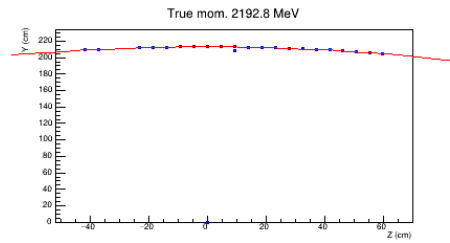
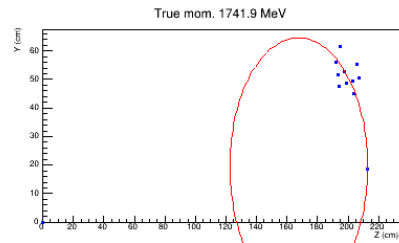
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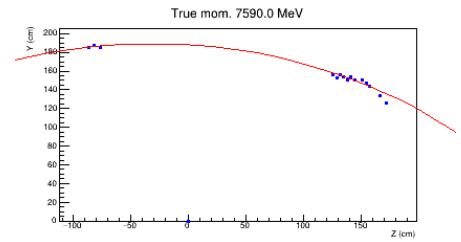
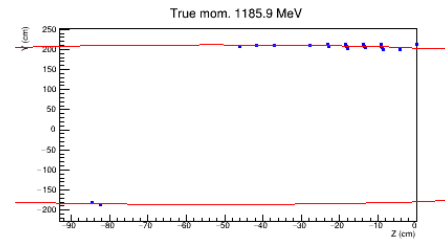
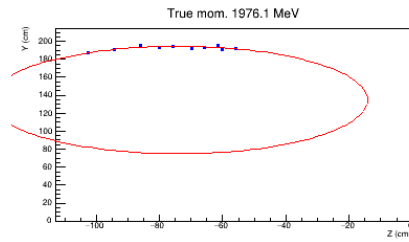
# Fitting the curves with those discrete hits



Failed fit



Failed fit





# Summary

- From a simple circle fit, I don't see correlation between radius and muon momentum.
- If above stands, we can't do spectral monitoring with ECAL. We will have things inside KLOE.