Potential detector geometry for triplet polarimeter

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Potential detector

Front

Back

Front:
4 sectors
16 strips/sector

Back:
16 sectors

96mm

48mm

22.5^0

Cost: $7500

Manufacturer:
Micron Semiconductor

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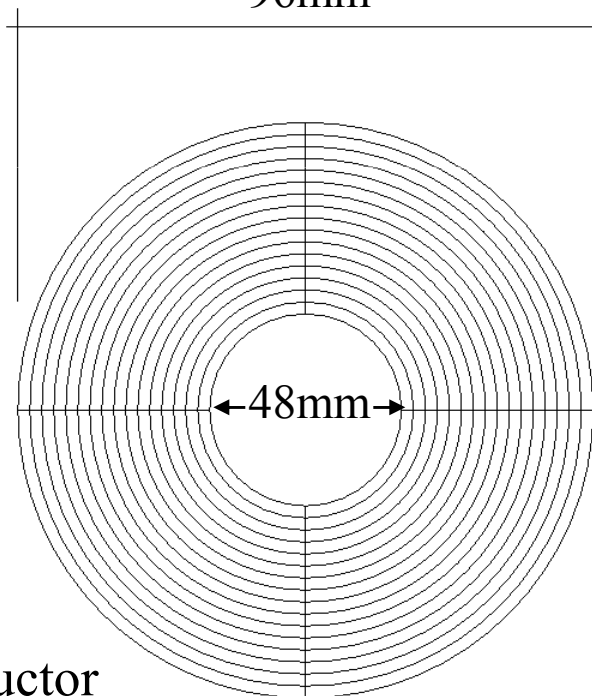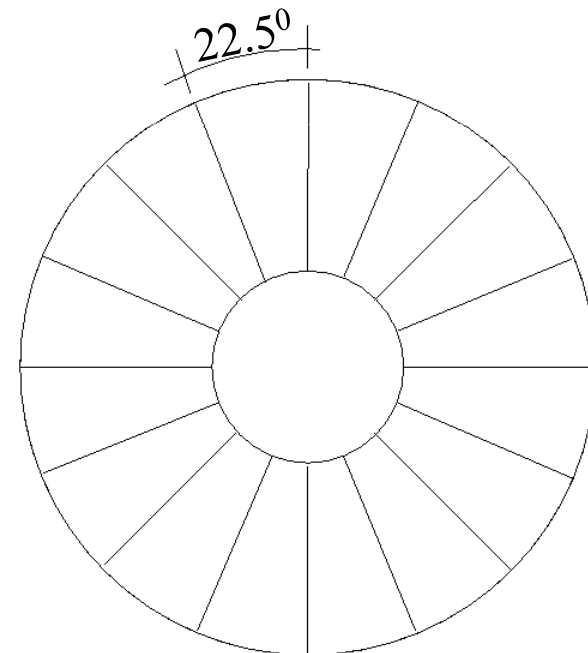
kinetic energy of recoil versus polar angle for $26^o < \theta < 45^o$ and $E_\gamma = 9$ GeV
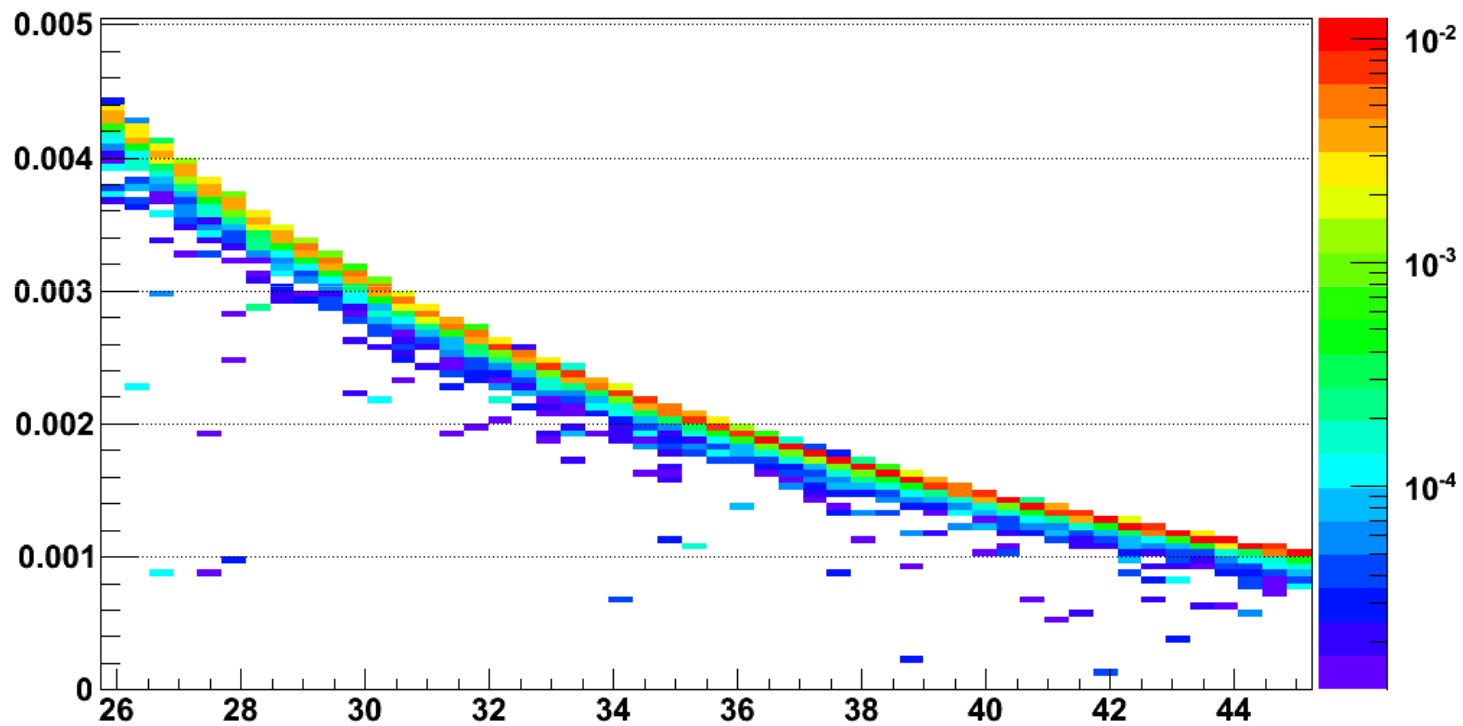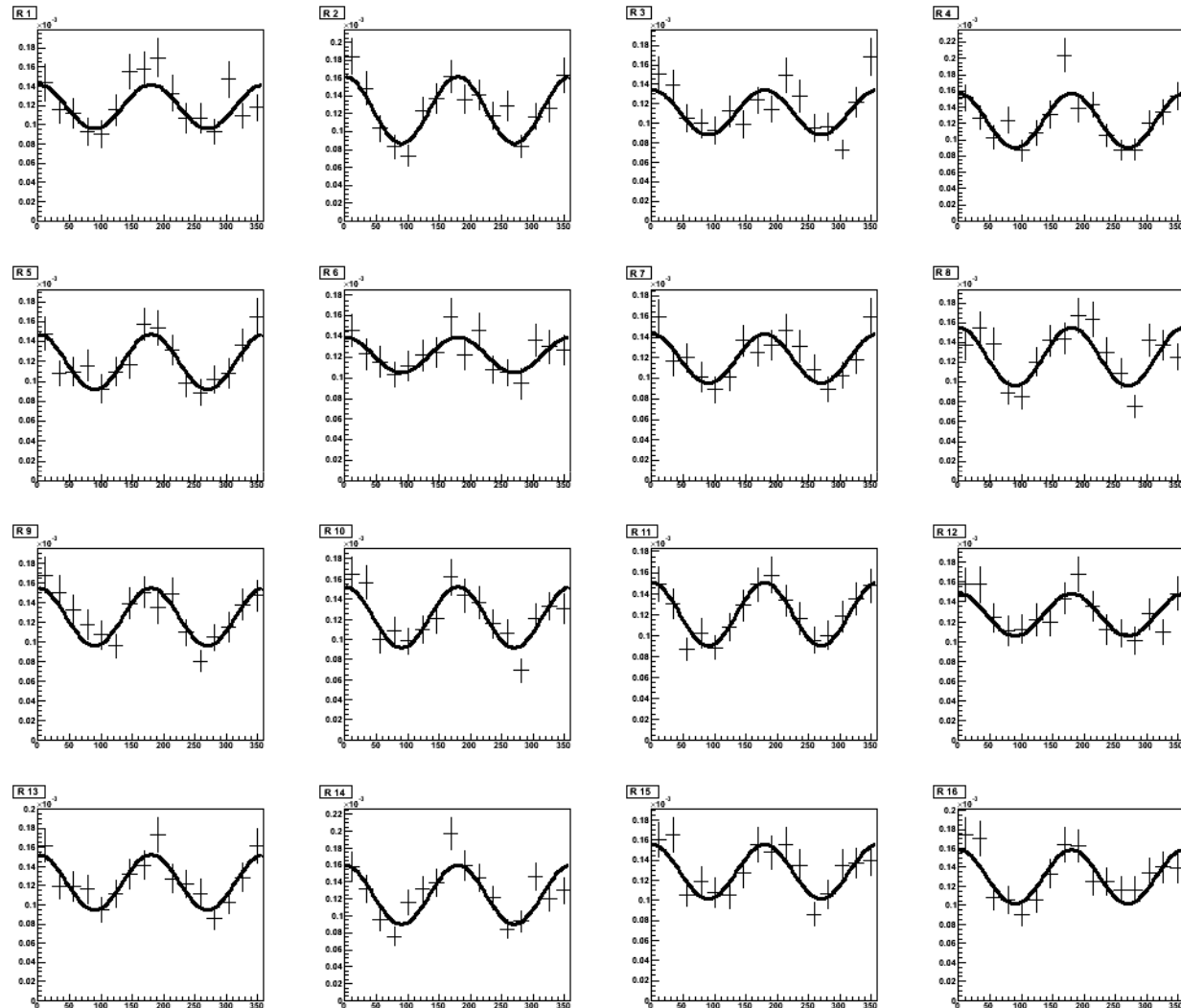
Potential geometry

Setting the detector distance from converter such that the largest polar angle measured is 45° (results in $\theta_{min} \sim 26°$)

48mm

e_R

converter

24mm

24mm

e^+

e^-

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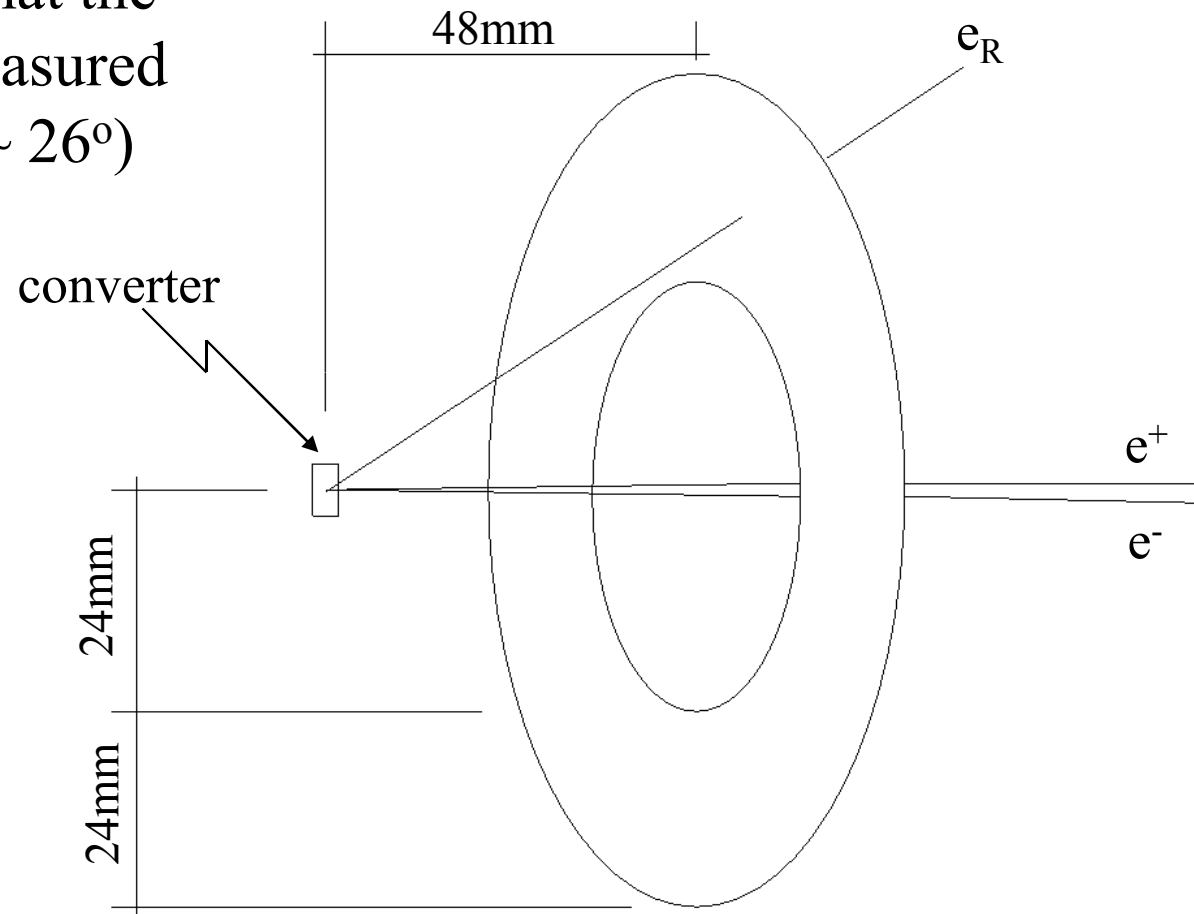
Triplet asymmetry fits

- 10 million generated events using Richard's code

- $E_\gamma = 9.0$ GeV

- Fit function: $A[1 + B\cos(2\varphi)]$

φ

Triplet asymmetry fit results

Zero order fit:
22.7 ± 0.1