

Cascade Simulations Update

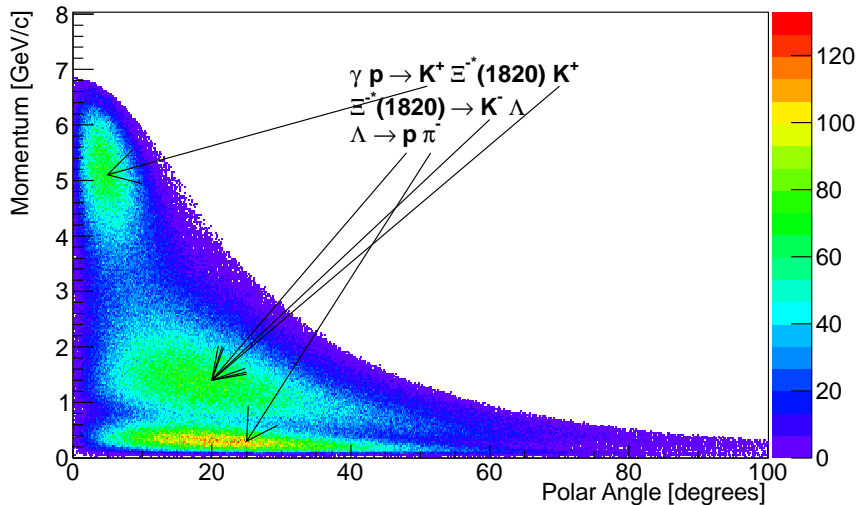
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GlueX Physics Meeting

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Generated Momentum versus θ Distributions



Characteristics

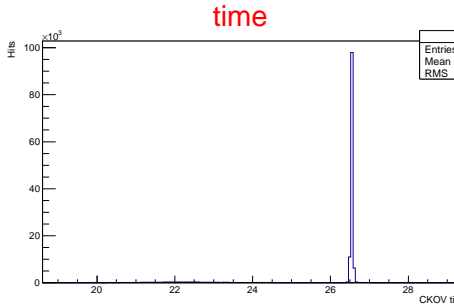
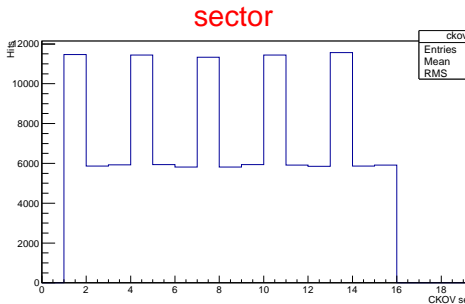
Gas Threshold Counter (RPI design)

- starts at downstream edge of solenoid
- C_4F_{10} gas ($n=1.00153$), ≈ 2 m in length
- $p_{th} \approx 2.5$ GeV/c for pions, 8.9 GeV/c for kaons
- 15 sectors in ϕ , each with PMT ($z \approx 590$ cm, $R \approx 100$ cm)
- Cherenkov light focussed onto PMTs by mirror system
- 1.5-5.0 eV radiation window
- Optics optimized by Eugene Chudakov and implemented in HDGeant by Richard Jones

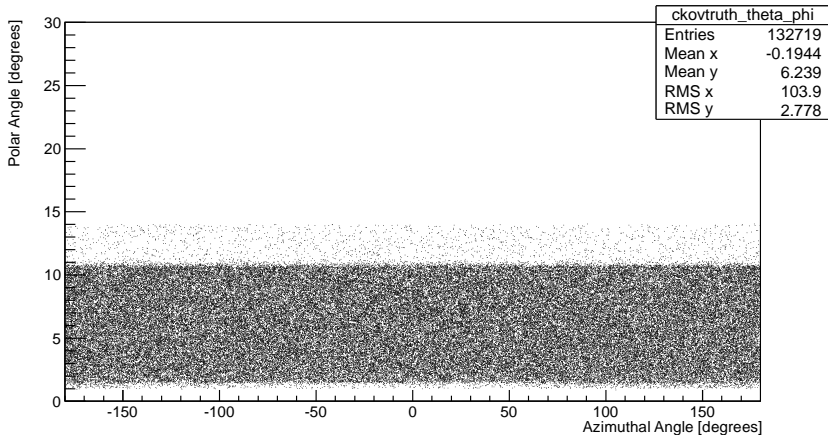
How much does a Cherenkov detector improve PID of fast forward-going kaons?

Single Particle Test

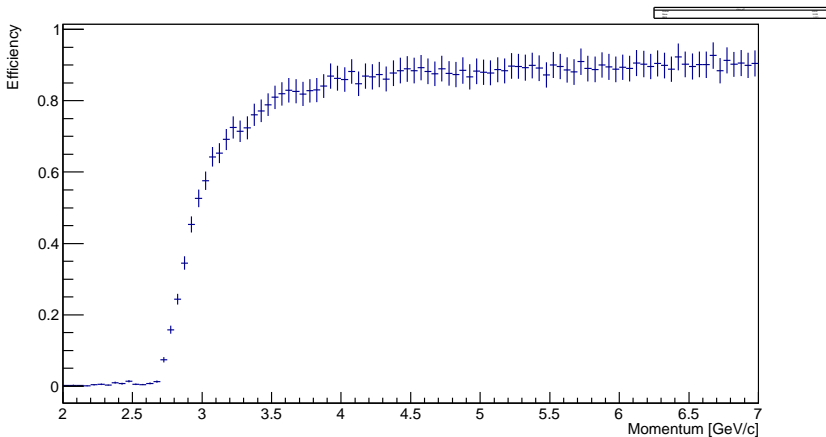
- Threw 200k π^+ tracks with $2 \text{ GeV}/c < p < 7 \text{ GeV}/c$, $0^\circ < \theta < 14^\circ$
- Looked at acceptance, detection efficiency, and photoelectron distributions



CKOV Geometrical Acceptance



CKOV Detection Efficiency



CKOV Photoelectrons versus Momentum

