

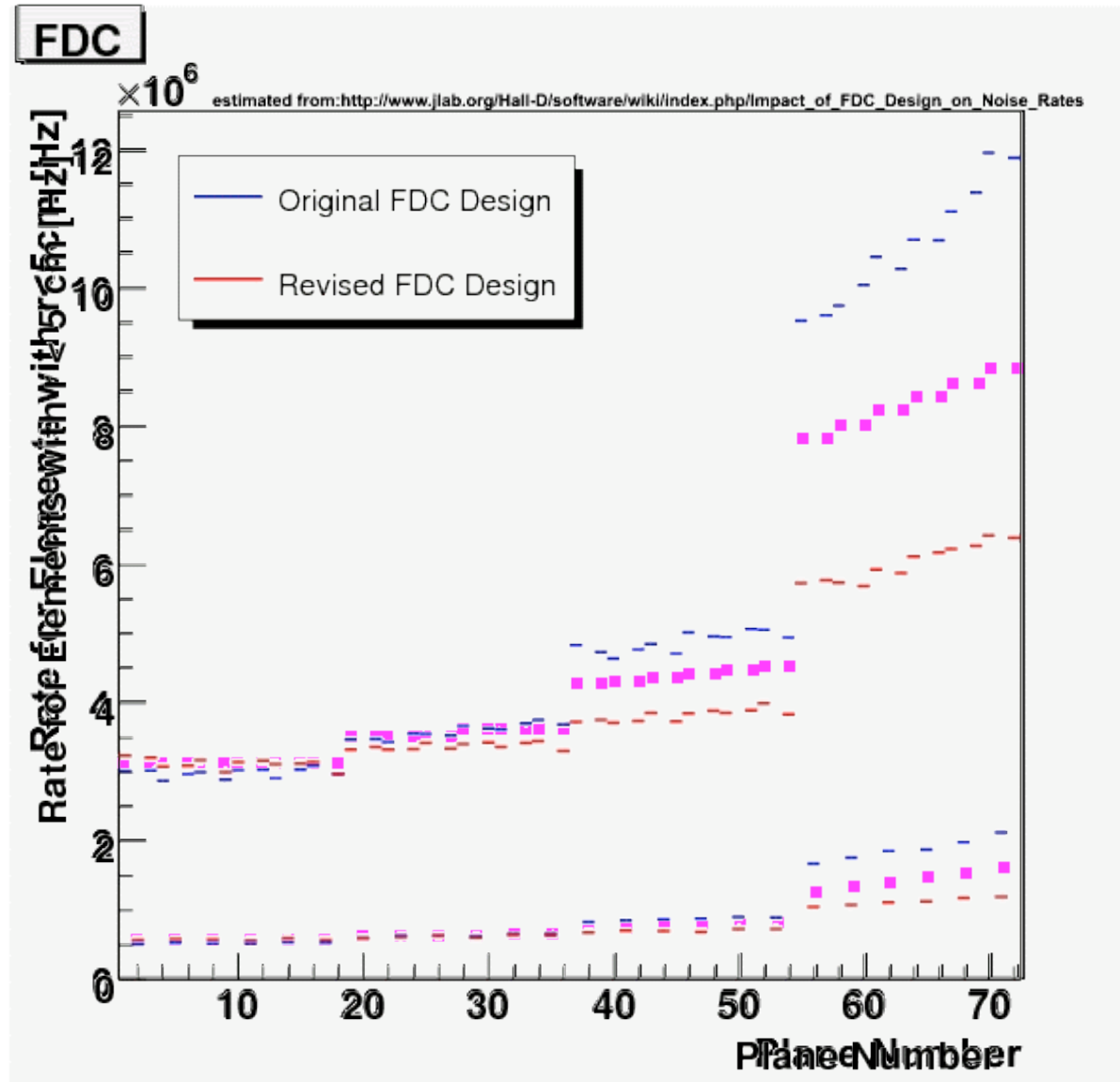
GlueX Event Size Estimate

David Lawrence

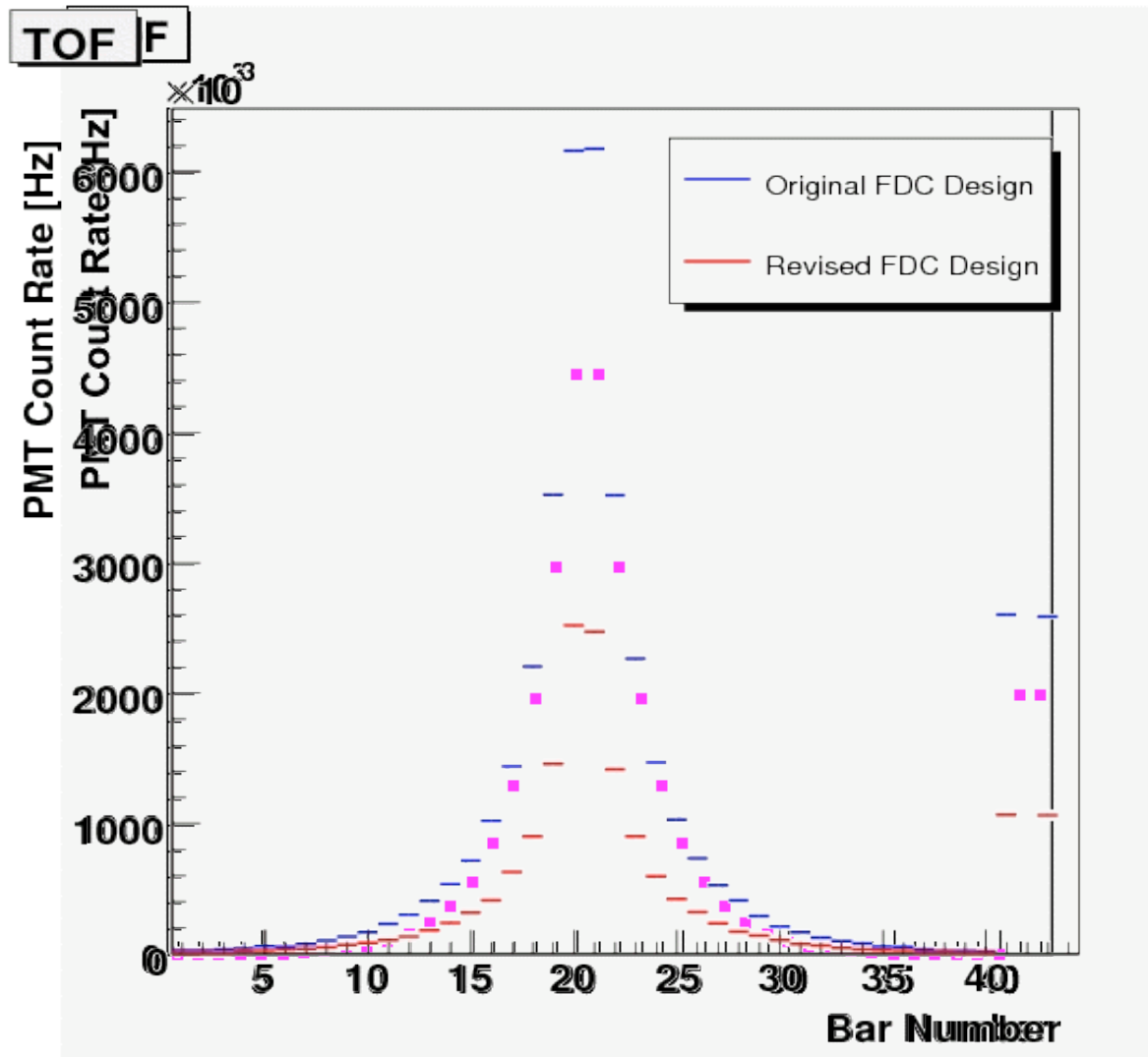
Estimating Number of hits

- Contribution from EM backgrounds
(from simulations by Matt Shepherd and Richard Jones in January)
- Contribution from triggering event
(as obtained by pythia and hdgeant)
- Contribution from hadronic background
as yet undetermined

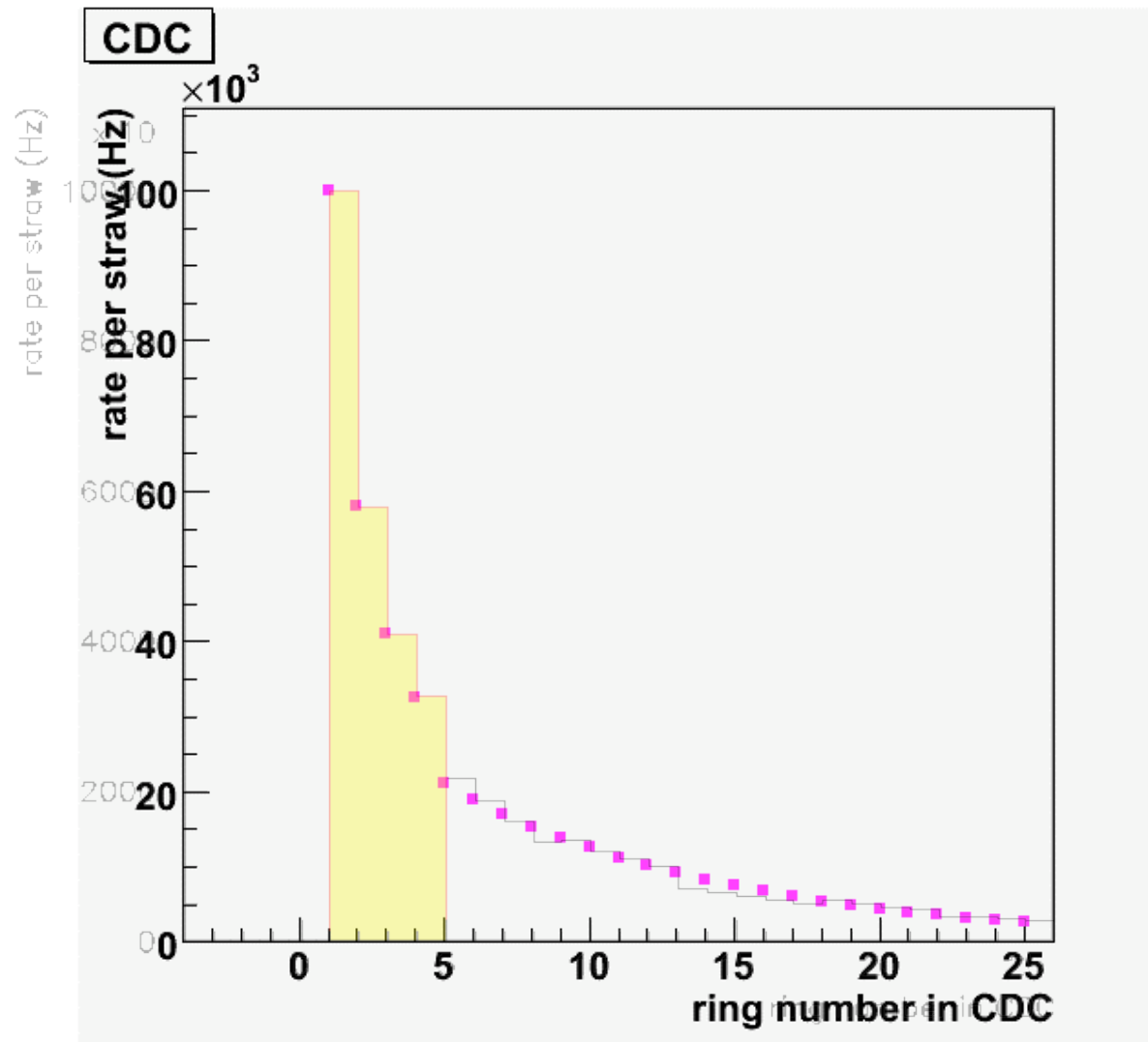
Background rate studies FDC



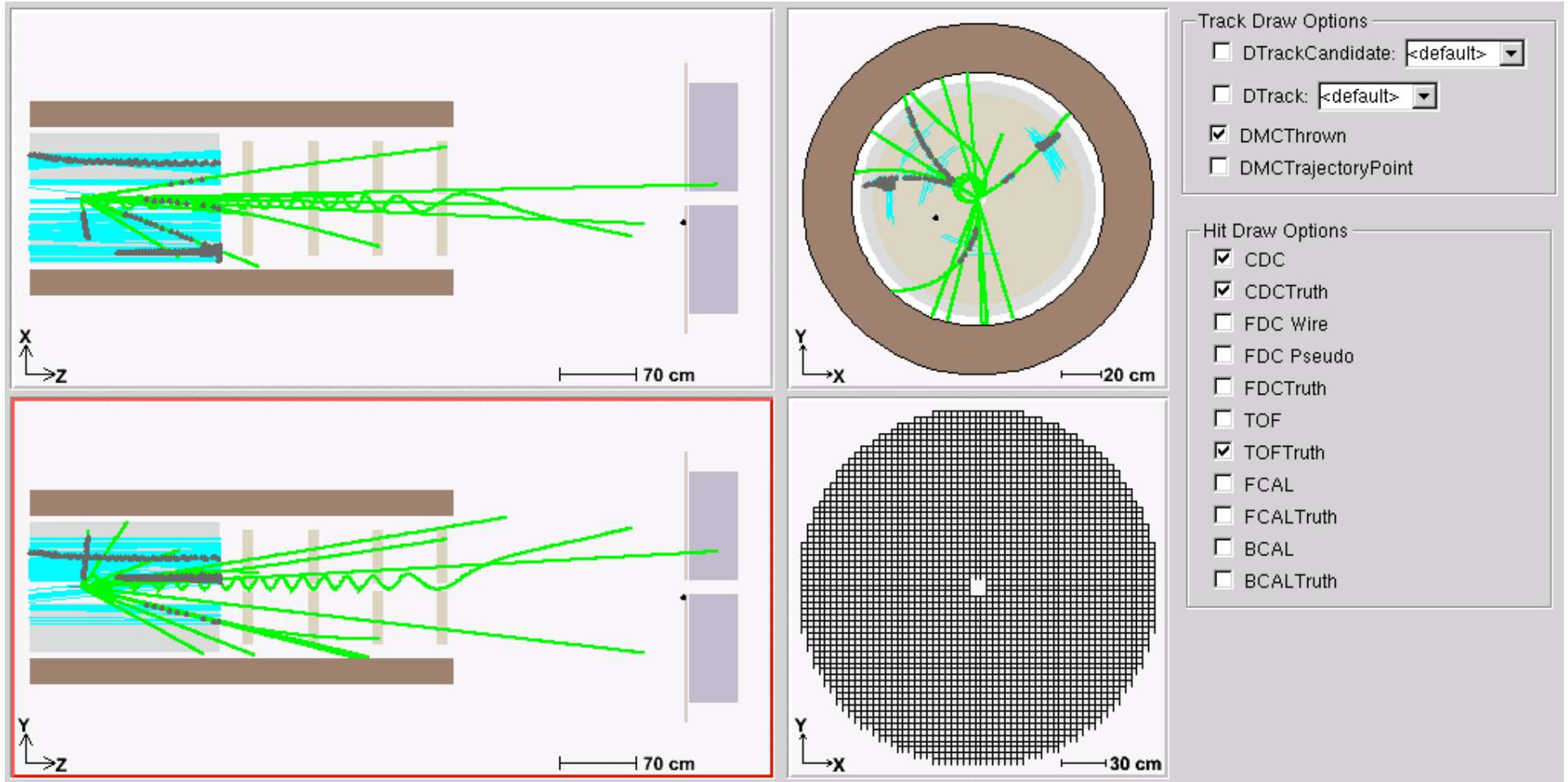
Background rate studies TOF



Background rate studies CDC

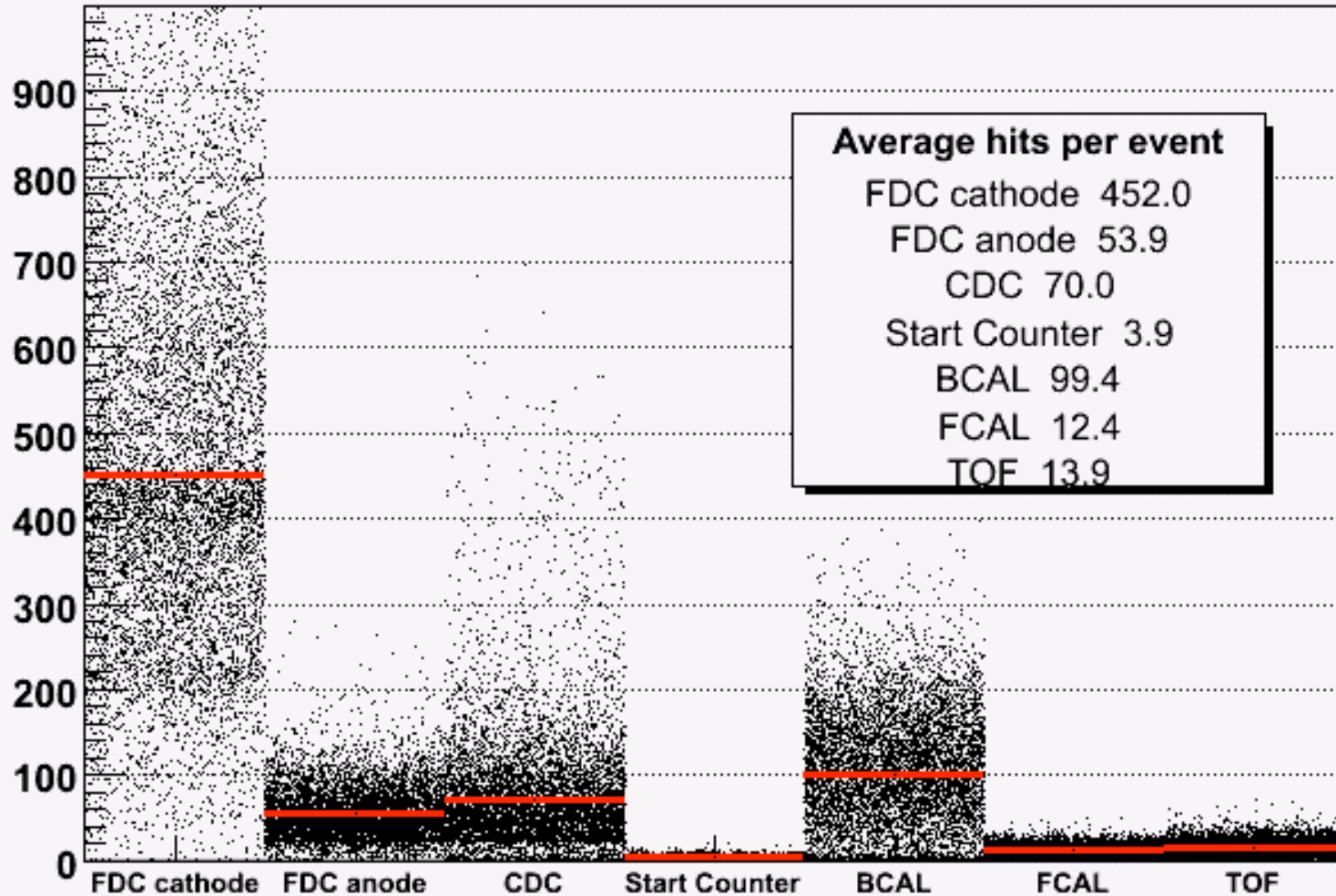


A PYTHIA Generated Event



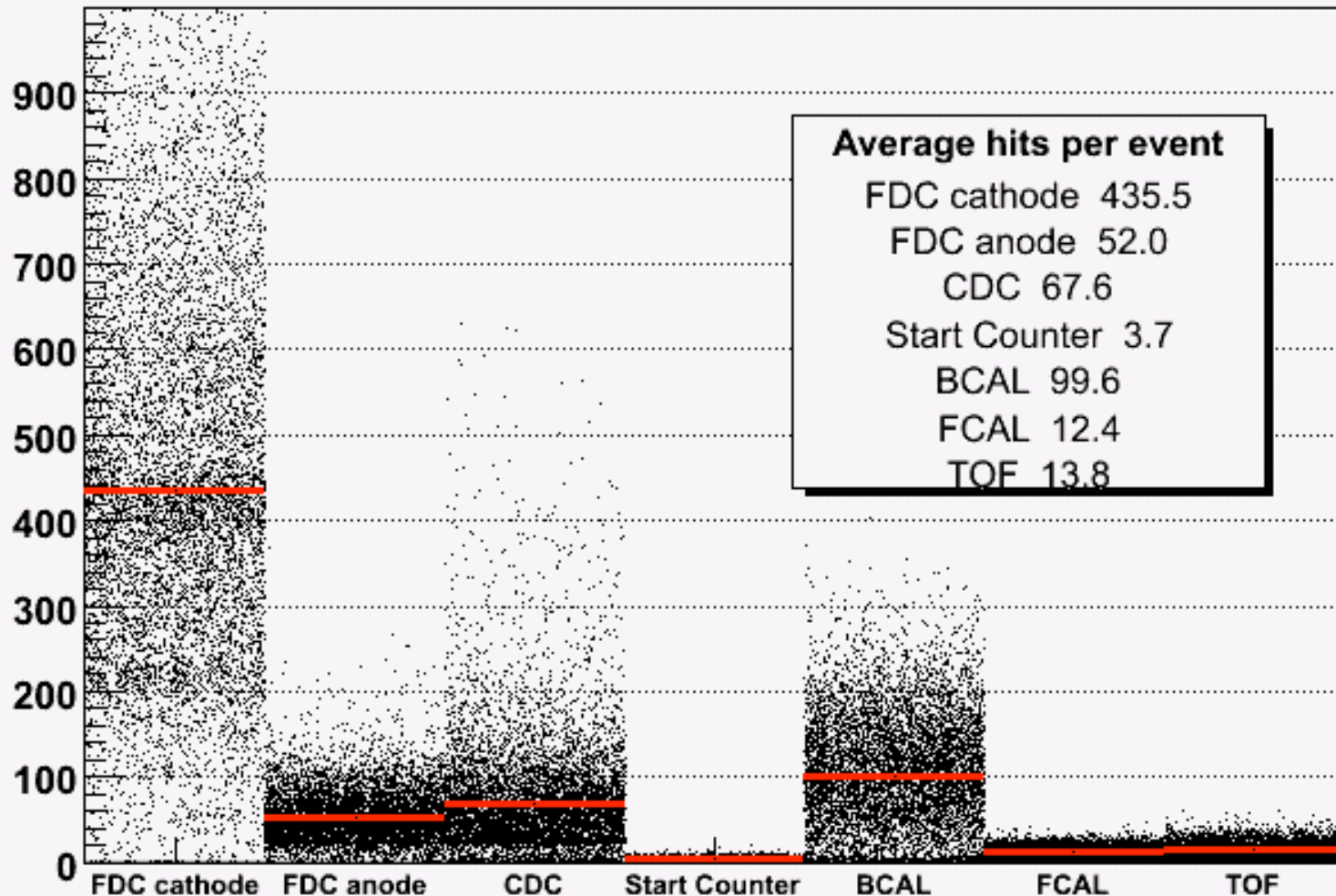
Hits per L1 trigger event

Hits per event vs. detector system for all events



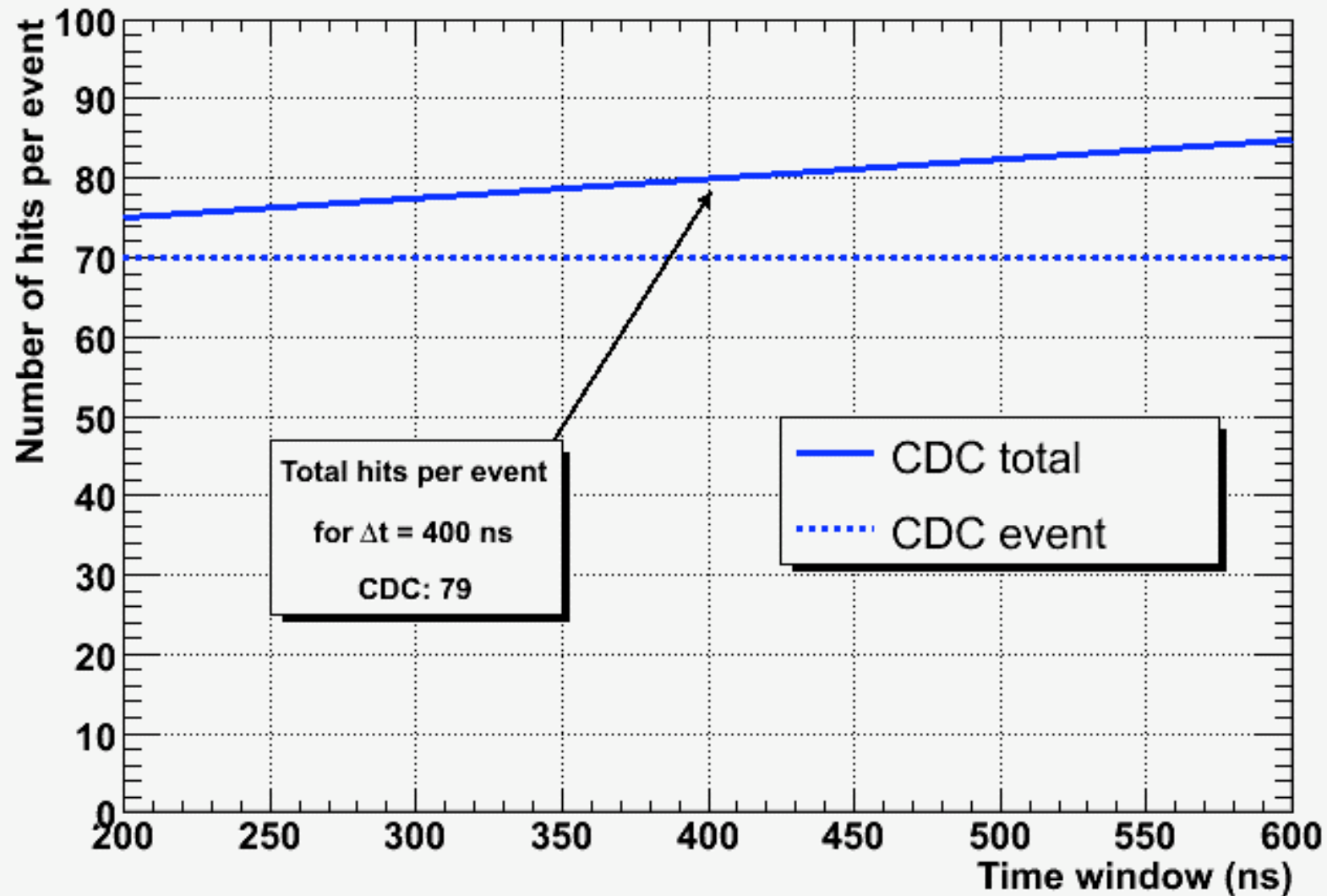
Hits per hadronic background event

Hits per event vs. detector system for all events



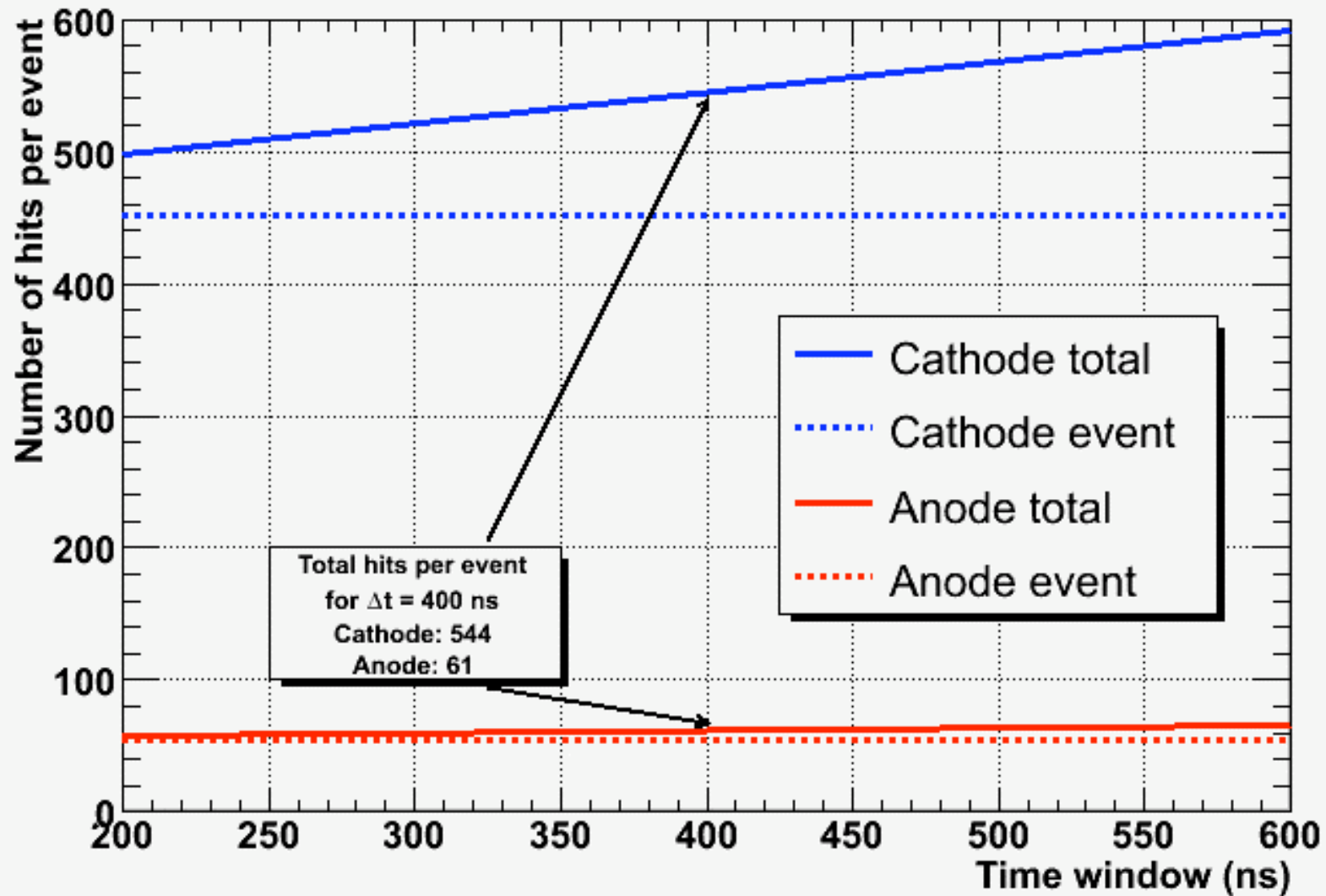
CDC Hits per Event

CDC Hits per event vs. time window



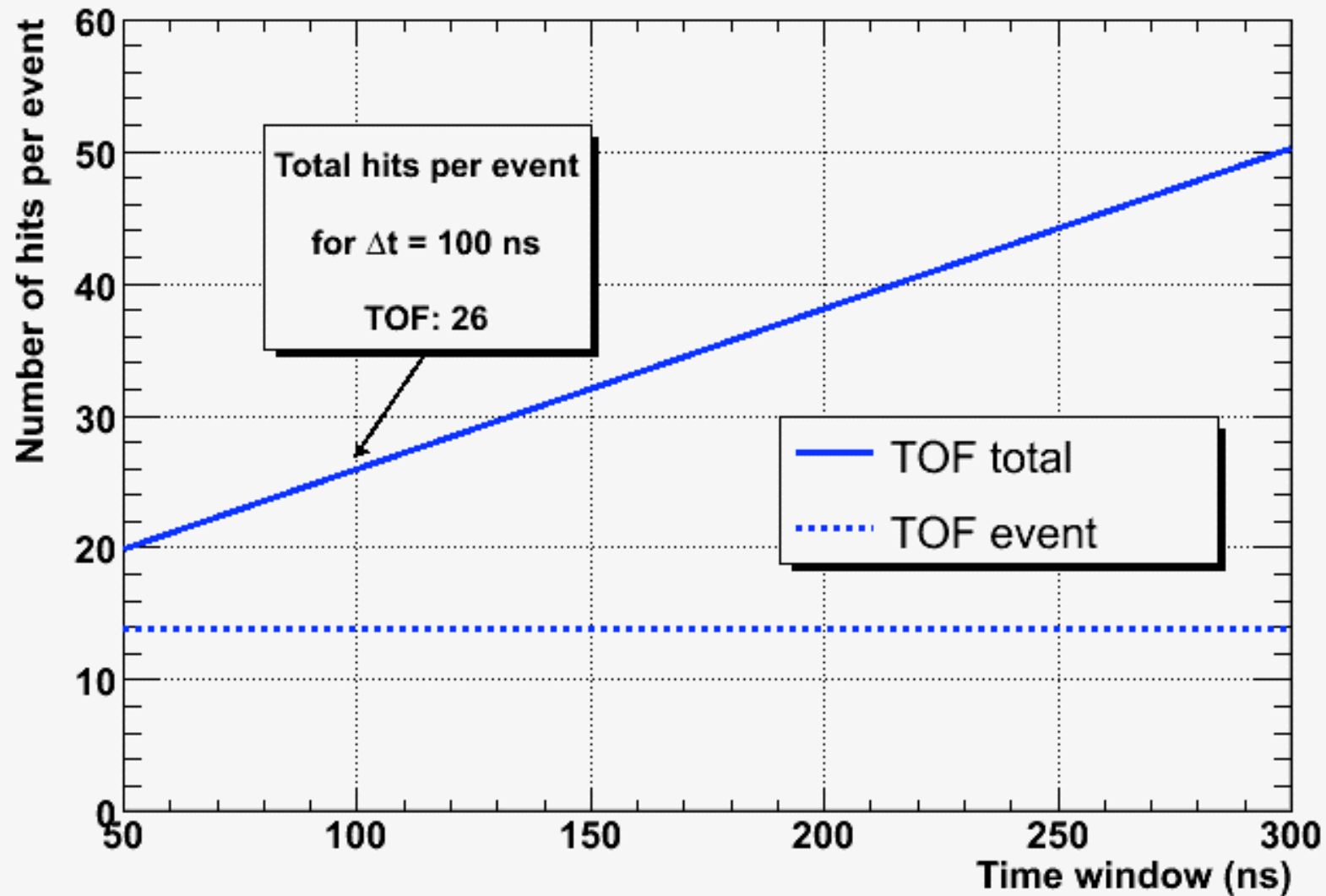
FDC Hits per Event

FDC Hits per event vs. time window



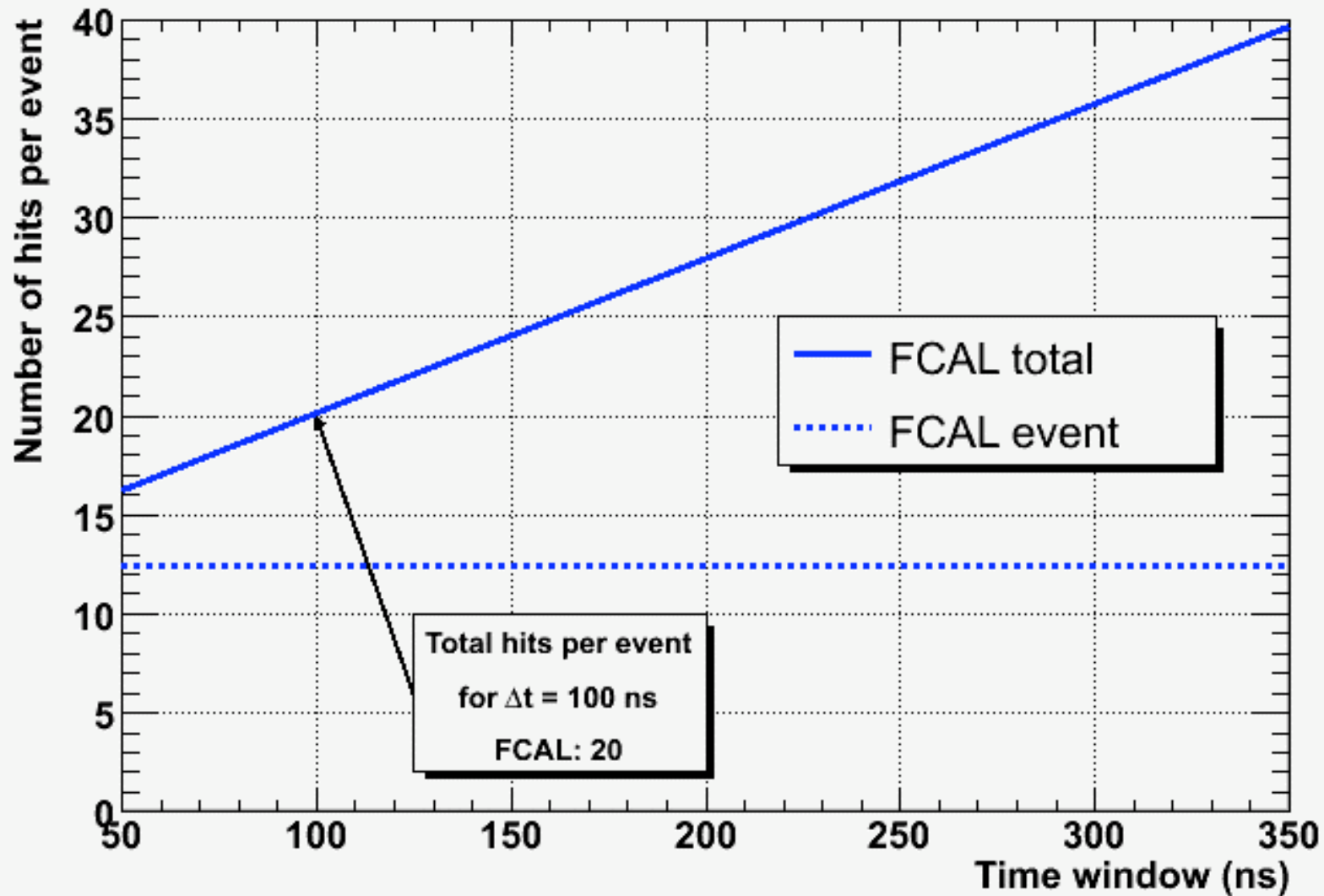
TOF Hits per Event

TOF Hits per event vs. time window



FCAL Hits per Event

FCAL Hits per event vs. time window



Summary of rates for $10^8 \gamma/\text{s}$ running

System	Hits/event	Total rate
FDC cathode	544	232 MHz
CDC	79	25 MHz
FDC anode	61	20 MHz
TOF	26	121 MHz
FCAL	20	78 MHz
Tagger	10	100 MHz
BCAL	>100	>20MHz

Byte counts

System	TDC	FADC125	FADC250
FDC cathode		544*	
FDC anode	61		
TOF	26		26
FCAL			20*
Tagger	10		10
BCAL	100		100
CDC		79*	
Total hits	197	623	156
bytes/hit	2	8	7
Total bytes	394	4,984	1,092

Event Size from data only: 6.47kB