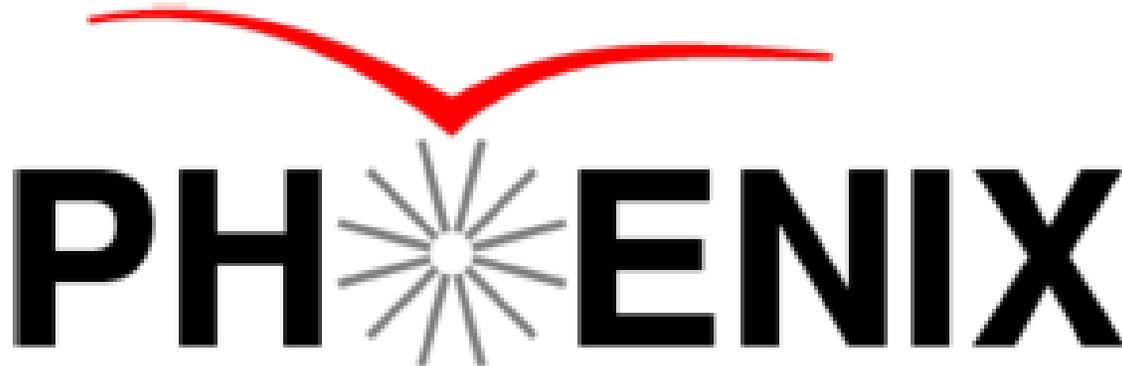


# PHENIX Status

- Continued Work on Detector Commissioning and Setup.
  - Minbias trigger detectors setup
    - Beam Quality – vertex, backgrounds
  - Level-1 trigger setup
  - DAQ development and setup

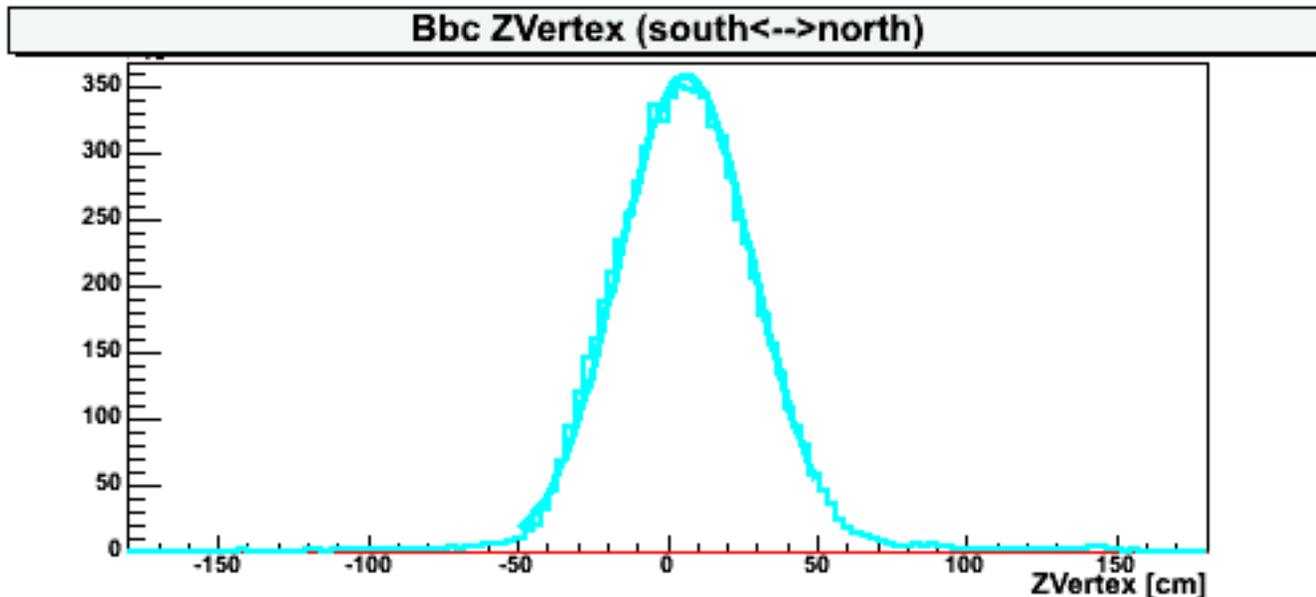


# Vertex Distribution

- Vertex distribution looks very nice!
  - PHENIX BUP request (70% delivered in +/- 30cm)

**BBC ONLINE MONITOR**

**Run #147566 Events: 94039 Date: Mon Jan 10 00:36:06 2005**



$Z_{\text{BLL1 w/o Vtx}}^{\text{Fit}} = 5.9 \text{ cm } (\sigma = 22 \text{ cm}) \dots \text{OK}$

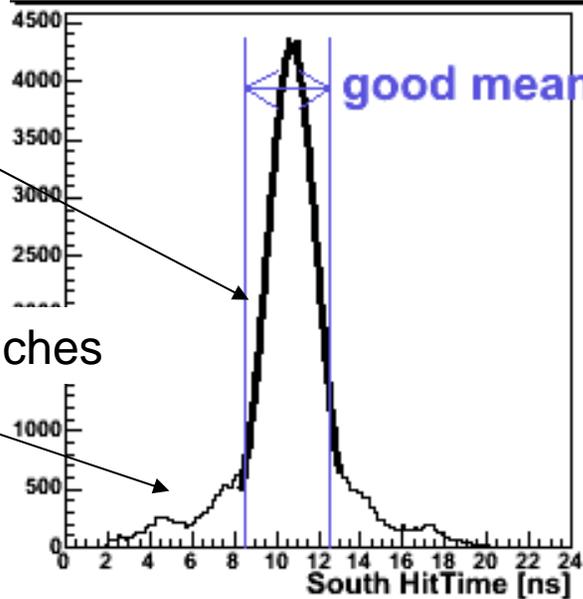
# Satellite Bunches

- Little intensity in satellite bunches
  - Doesn't appear to grow dramatically within a store

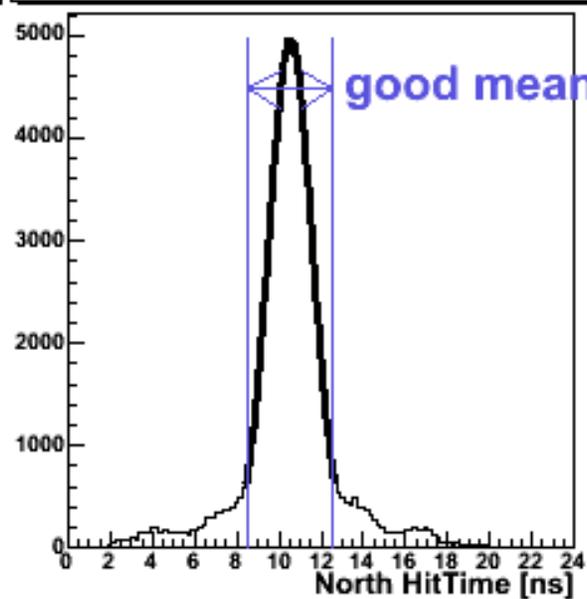
## BBC ONLINE MONITOR

Run #147566 Events: 94039 Date: Mon Jan 10 00:36:06 2005

### BBC South Hittime

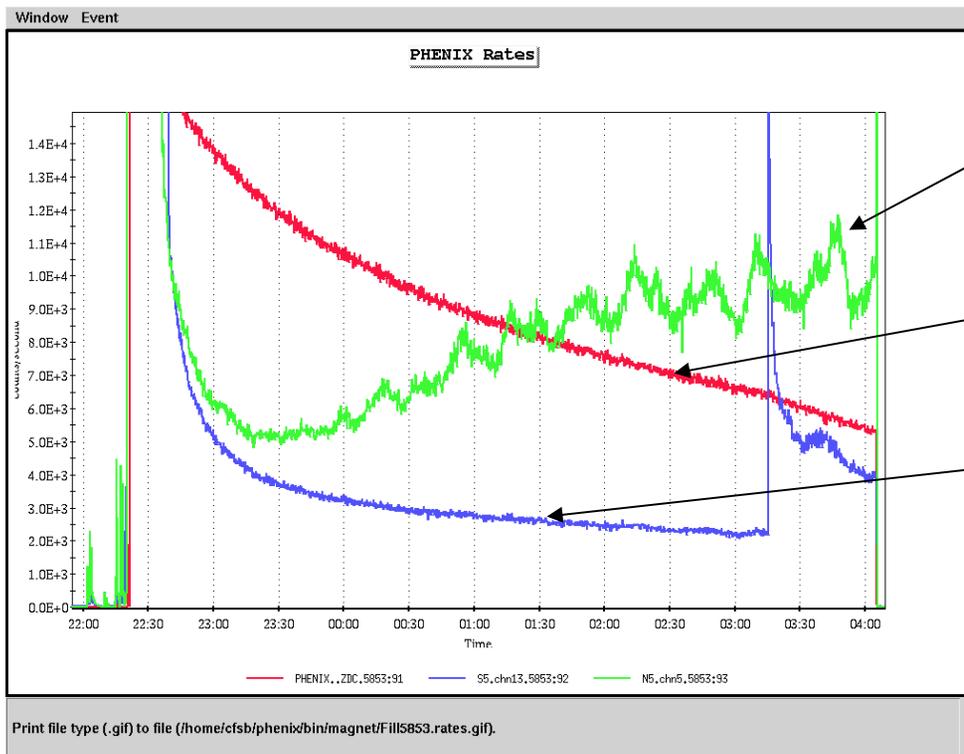


### BBC North Hittime



# Backgrounds

- Backgrounds, particularly in MUID North (yellow beam), have been a problem
  - Fixed with collimation early morning Jan 11 (thanks Angelika!)



MUID N background counters

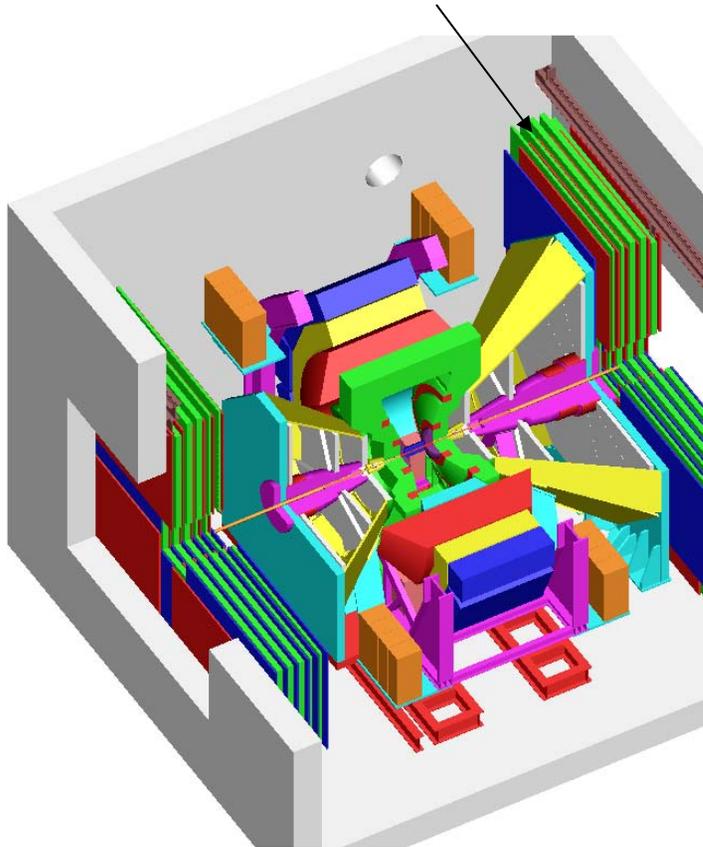
ZDC coincidence

MUID S background counters

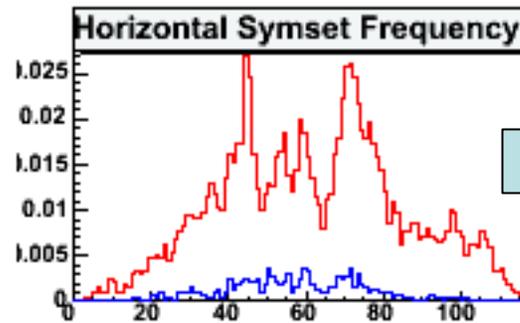
# MuID LL1 Trigger Setup

- New Level-1 Trigger for Muon Identifier:
  - South arm timed in and ready, north arm underway...

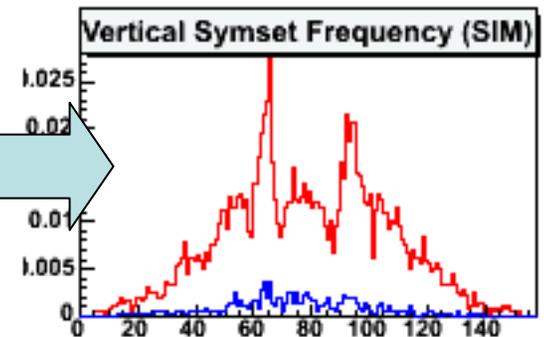
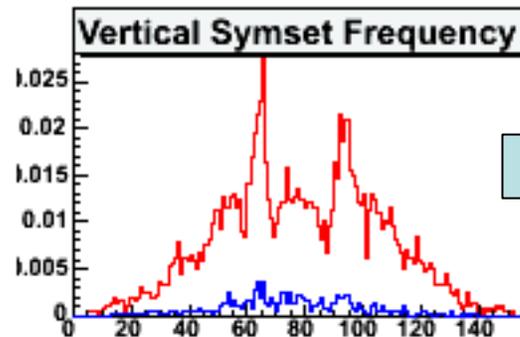
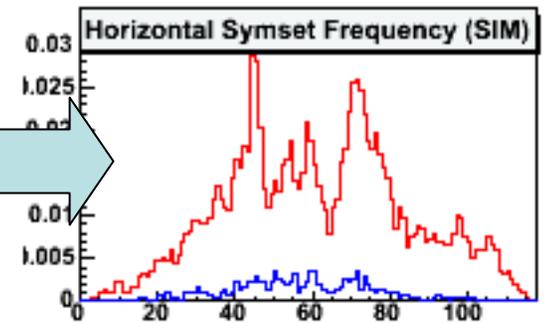
Muon Identifier



LL1 Data:



Simulation:



# DAQ

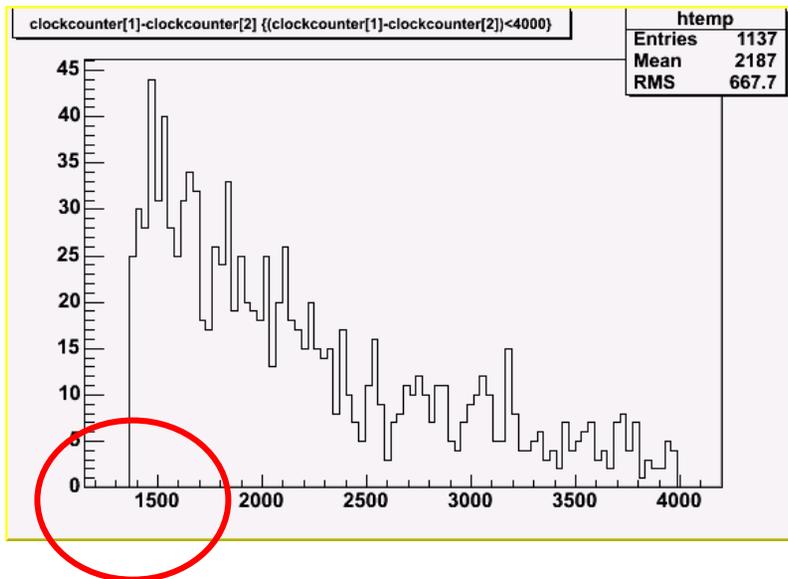
- Redesigned Event Builder up and running.
  - 24 subsystem elements (granules)
  - ~4.5kHz with six buffer boxes

Granule Names	M Status	DCM Status	Name	#Events	Event Size	Data Rate	Buff Usage	Read Error	Busy	OK	Name	#Events	#L2Accept	#Read Err	ATP Status	Ave Data Rate	ATP OK	ET OK	EBC Status	EBC
BB572856	1	0	SERBB0	568421	1.752 KB	4.162 MB/s	0.855	0	0	0	ATP0	16313	0	0	70.669/s	4.391 MB/s	0	0	EBC OK	
ZD572856	1	0	SERZD0	568271	0.592 KB	1.407 MB/s	0.855	0	0	0	ATP1	15892	0	0	65.041/s	4.141 MB/s	0	0	#Recieved	5735
M572856	1	0	SERMYD0	567971	5.551 KB	13.174 MB/s	0.858	0	0	0	ATP2	33334	0	0	112.278/s	6.997 MB/s	0	0	#Assigned	5726
DI572859	1	0	SERDC.W.0	569520	1.045 KB	2.499 MB/s	0.854	0	0	0	ATP4	16360	0	0	71.859/s	4.520 MB/s	0	0	#Completed	5701
PC572884	1	0	SERDC.W.1	569200	1.387 KB	3.313 MB/s	0.850	0	0	0	ATP5	16105	0	0	67.640/s	4.248 MB/s	0	0	Avg Event Rate	2922.5
RI572897	1	0	SERP.C.W.0	568221	3.946 KB	9.380 MB/s	0.855	0	0	0	ATP6	33758	0	0	114.068/s	7.168 MB/s	0	0	Avg Assem Lat	98.9
EN572897	1	0	SERRI.C.H.W.0	568137	1.452 KB	3.448 MB/s	0.846	0	0	0	ATP7	16372	0	0	71.265/s	4.421 MB/s	0	0		
EN572897	1	0	SEREMC.W.B	568621	3.863 KB	9.188 MB/s	0.855	0	0	0	ATP8	16150	0	0	67.675/s	4.217 MB/s	0	0		
EN572897	1	0	SEREMC.H.T	568960	5.706 KB	13.581 MB/s	0.845	0	0	0	ATP9	33623	0	0	113.331/s	7.070 MB/s	0	0		
DI572913	1	0	SERDC.E.0	569320	3.801 KB	9.095 MB/s	0.854	0	0	0	ATPA	16337	0	0	68.889/s	4.330 MB/s	0	0		
PC572934	1	0	SERDC.E.1	569400	1.192 KB	2.853 MB/s	0.850	0	0	0	ATPB	16067	0	0	68.973/s	4.319 MB/s	0	0		
TE572943	1	0	SERP.C.E.0	568960	5.859 KB	13.948 MB/s	0.828	0	0	0	ATPC	34629	0	0	114.718/s	7.167 MB/s	0	0		
			SERTE.C.E.0	569871	0.470 KB	1.123 MB/s	0.855	0	0	0	ATPD	16341	0	0	72.055/s	4.447 MB/s	0	0		
			SERTE.C.E.1	569400	0.563 KB	1.347 MB/s	0.842	0	0	0	ATPE	15980	0	0	67.261/s	4.092 MB/s	0	0		
			SERTE.C.E.2	569280	0.526 KB	1.258 MB/s	0.845	0	0	0	ATPF	33140	0	0	115.191/s	7.515 MB/s	0	0		
			SERTE.C.E.3	568640	0.647 KB	1.540 MB/s	0.847	0	0	0	ATP10	16299	0	0	70.891/s	4.515 MB/s	0	0		
TC572968	1	0	SERTO.F.E.0	569871	4.930 KB	11.794 MB/s	0.855	0	0	0	ATP11	16083	0	0	71.555/s	4.442 MB/s	0	0		
RI572982	1	0	SERRI.C.H.E.0	569771	1.891 KB	4.524 MB/s	0.855	0	0	0	ATP12	34463	0	0	113.837/s	7.053 MB/s	0	0		
EN573007	1	0	SEREMC.E.T	569440	5.346 KB	12.793 MB/s	0.875	0	0	0	ATP13	16320	0	0	71.734/s	4.547 MB/s	0	0		
EN573015	1	0	SEREMC.E.B.0	568880	3.352 KB	7.973 MB/s	0.833	0	0	0	ATP14	15989	0	0	68.086/s	4.284 MB/s	0	0		
			SEREMC.E.B.1	569640	3.878 KB	9.271 MB/s	0.835	0	0	0	ATP15	33799	0	0	133.429/s	8.296 MB/s	0	0		
M1573045	1	0	SERMUT.R.S.ST1.0	568640	0.445 KB	1.059 MB/s	0.847	0	0	0	ATP16	16288	0	0	71.713/s	4.503 MB/s	0	0		
			SERMUT.R.S.ST2.0	570021	1.065 KB	2.451 MB/s	0.855	0	0	0	ATP17	15121	0	0	75.530/s	4.682 MB/s	0	0		
			SERMUT.R.S.ST3.0	569280	0.535 KB	1.282 MB/s	0.845	0	0	0	ATP18	34359	0	0	114.381/s	7.162 MB/s	0	0		
			SERMUT.R.S.ST3.1	568881	0.483 KB	1.149 MB/s	0.820	0	0	0	ATP1A	16378	0	0	72.357/s	4.381 MB/s	0	0		
M1573056	1	0	SERMUT.R.N.ST1.0	568880	0.170 KB	0.404 MB/s	0.820	0	0	0	ATP1.C	16178	0	0	68.368/s	4.259 MB/s	0	0		
			SERMUT.R.N.ST2.0	568920	0.374 KB	0.891 MB/s	0.830	0	0	0										
			SERMUT.R.N.ST3.0	569920	0.243 KB	0.582 MB/s	0.842	0	0	0										
			SERMUT.R.N.ST3.1	569071	0.340 KB	0.810 MB/s	0.855	0	0	0										
M1573056	1	0	SERMUID.N	569120	0.216 KB	0.516 MB/s	0.842	0	0	0										
ER573056	1	0	SERERT.E	568880	0.427 KB	1.015 MB/s	0.828	0	0	0										
ER573056	1	0	SERERT.W	569581	0.422 KB	1.010 MB/s	0.845	0	0	0										
FC573056	1	0	SERFCAL	569200	1.290 KB	3.082 MB/s	0.850	0	0	0										
AC573056	1	0	SERAGELW	569400	0.487 KB	1.166 MB/s	0.850	0	0	0										
TC573073	1	0	SERTO.F.W.0	570121	1.161 KB	2.778 MB/s	0.855	0	0	0										
M1573088	1	0	SERMUID.S	569520	0.217 KB	0.519 MB/s	0.854	0	0	0										
Sum					65,622 KB	156,481 MB/s														

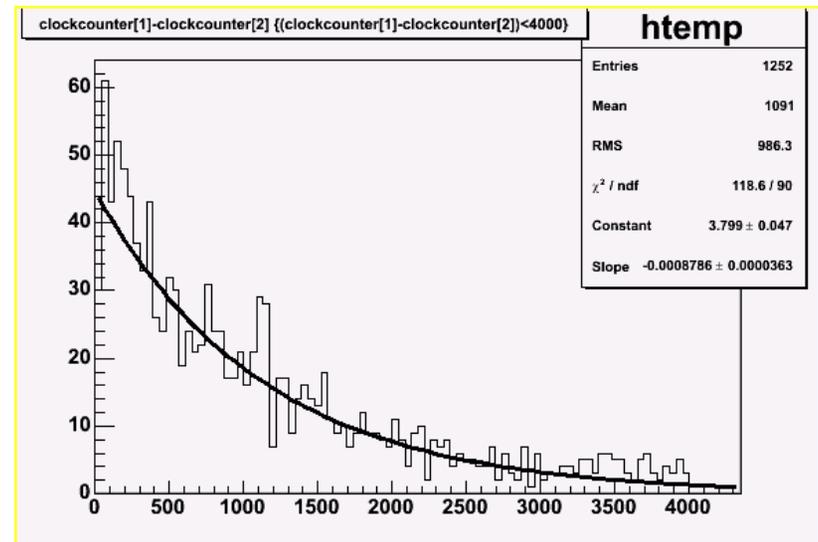
# DAQ: Multi-Event Buffering

- This year we will exercise a feature of our front-end electronics that allows concurrent readout and digitization.
  - Reduces dead-time at high trigger rates

## Single-Event Buffered



## Multi-Event Buffered



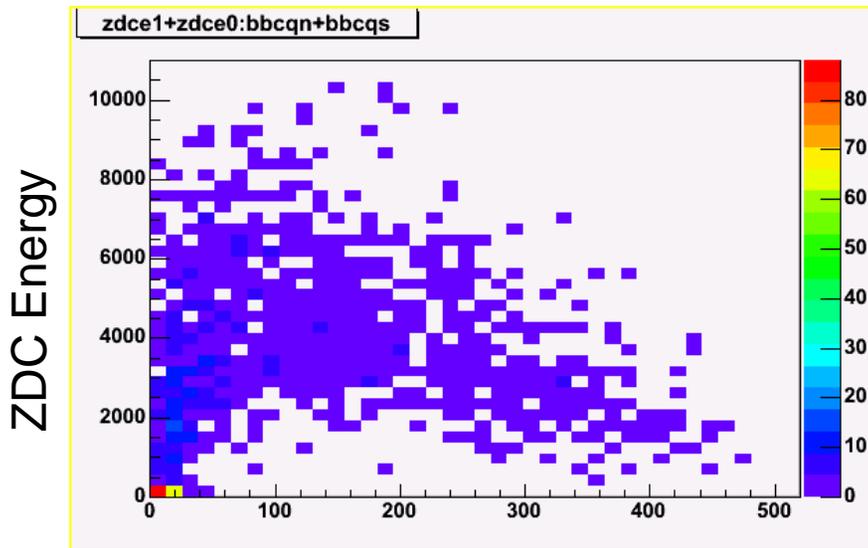
Note suppressed zero!

## Clock Ticks Between Events

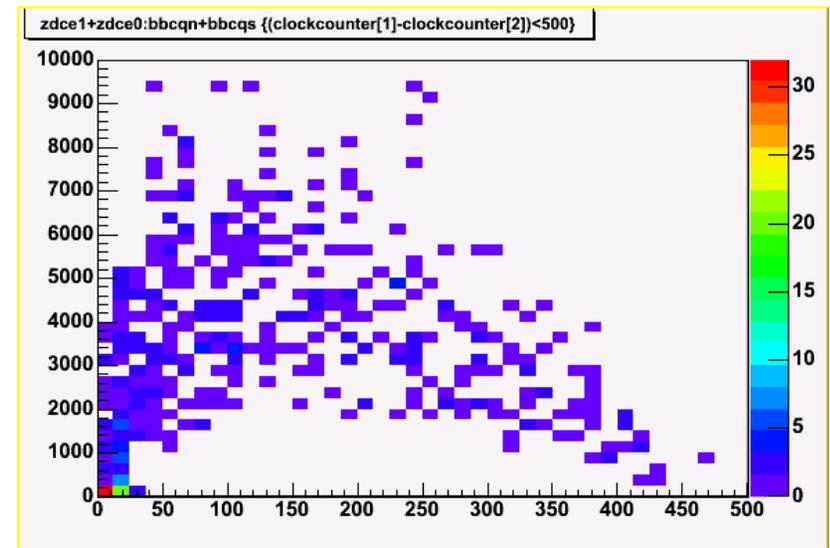
# Tests of Multievent Buffering

- Need to evaluate the effect of multievent buffering on data
  - Alignment, calibration and production run on 3M events
  - QA ongoing, looks good so far

## Single-Event Buffered



## Multi-Event Buffered: $\Delta T < 500$ clks



BB Charge Sum