
PHOBOS

Run 5 Progress

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January 5, 2004

Run Preparation

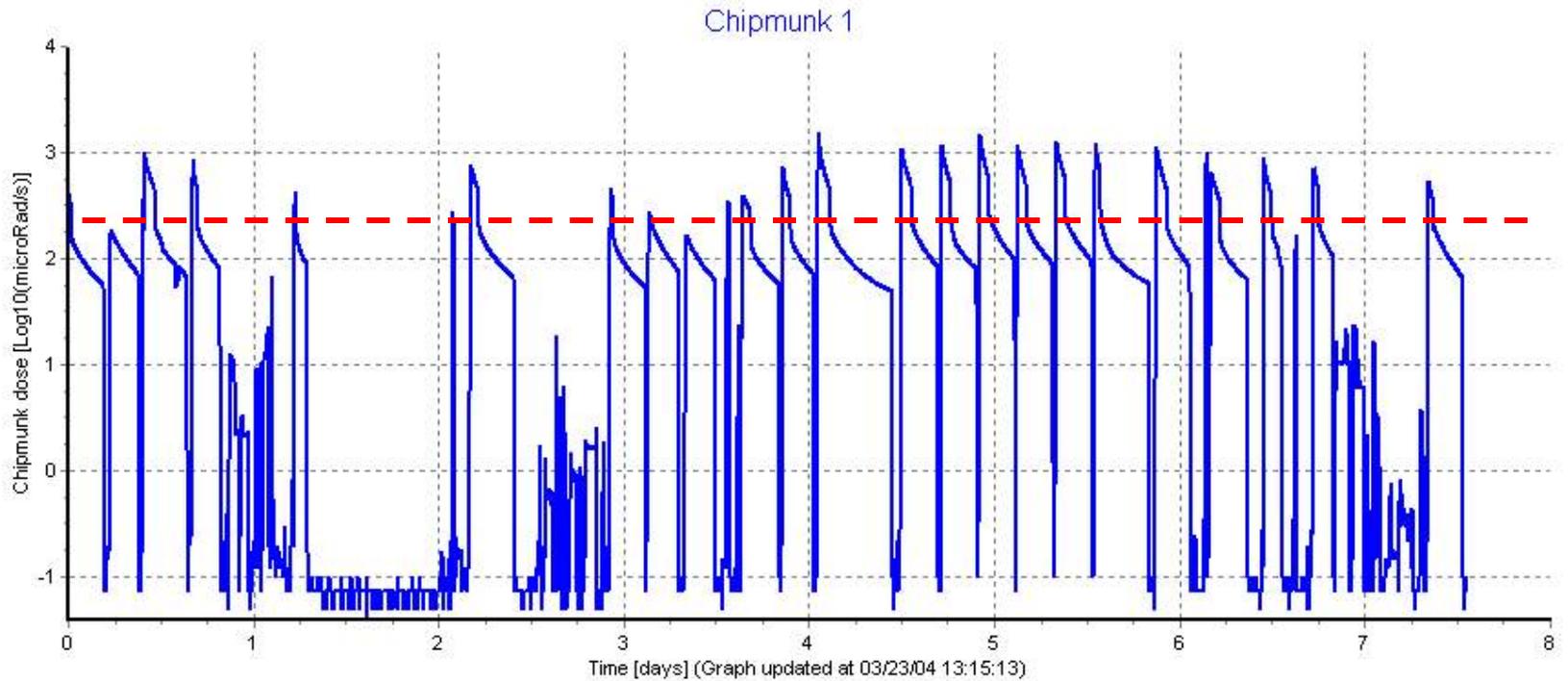
- **Additional time allowed major progress on run goals**
- **DAQ now running with 530 Hz top speed (Silicon only, FASTBUS limit ~450 Hz).**
- **System last night running at ~400 Hz**
 - **Nearly a factor of 2 over typical running last year**
 - **Major achievement for PHOBOS DAQ Team (Andrei Sukhanov & Iouri Sedykh)**
- **Progress on new TDC readout system made, but slowed due to run prep**

Last Night

- **Low radiation - ~100urad/sec in both chipmunks**
- **Silicon experts called in at midnight**
- **Stable beam by 1:30am**
- **Substantial amount of system working**
 - **Trigger system (Paddles & T0)**
 - **Full silicon detector**
- **All data sunk and automatically processed on RCF**
 - **Most done by 8:30am this morning**
- **Nice test of detector, online, and offline chains**

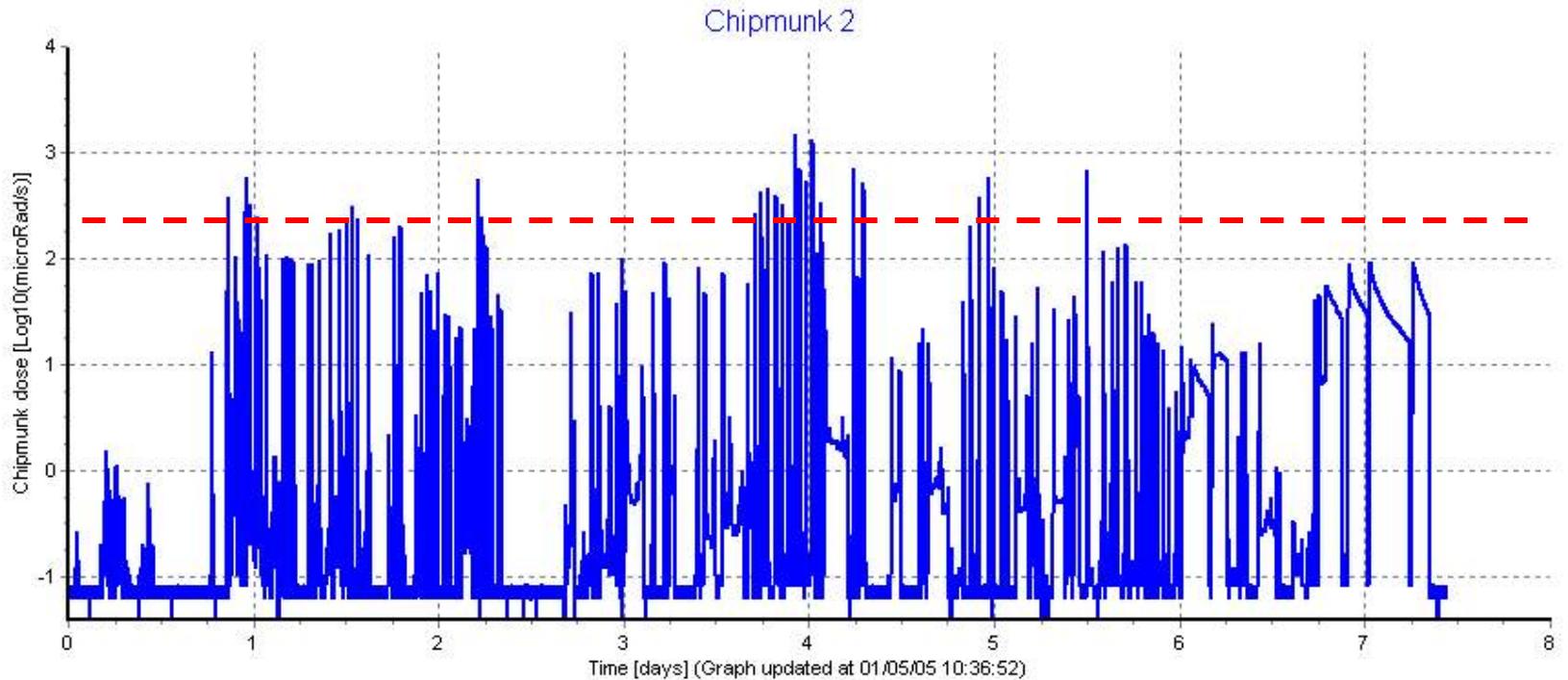
Radiation in Run 4

- **End of March 2004**



Radiation in Run 5

- **Far below Run 4, so far...**



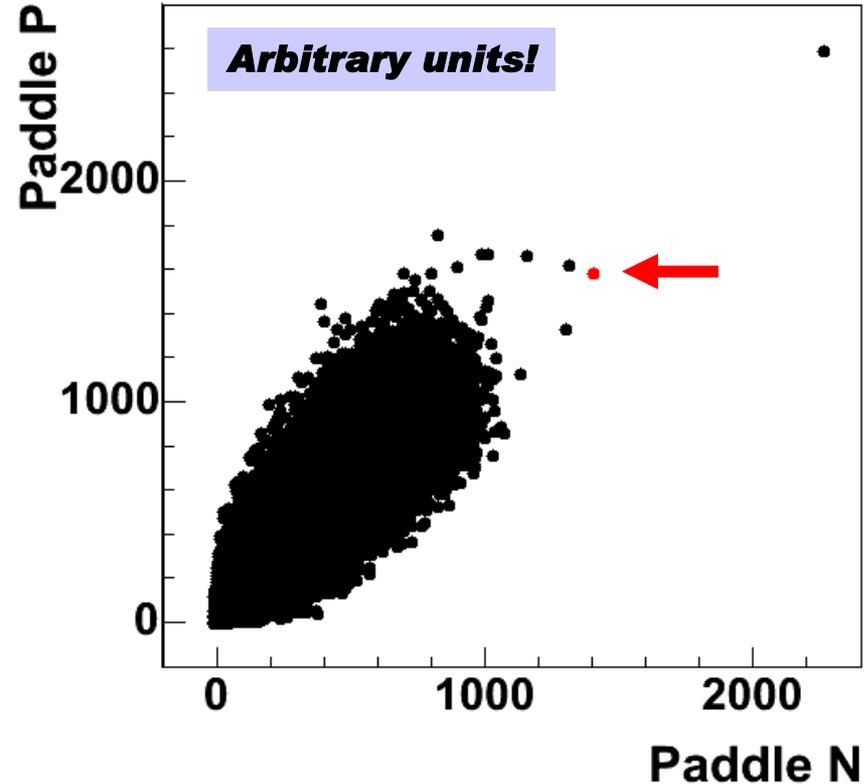
Raw Cu+Cu Data

PdIP:PdIN {RMSselVertex.vs==0&&abs(RMSselVertex.vz)<10}

**Overall, signals
look reasonable
(pre-preliminary
calibrations)**

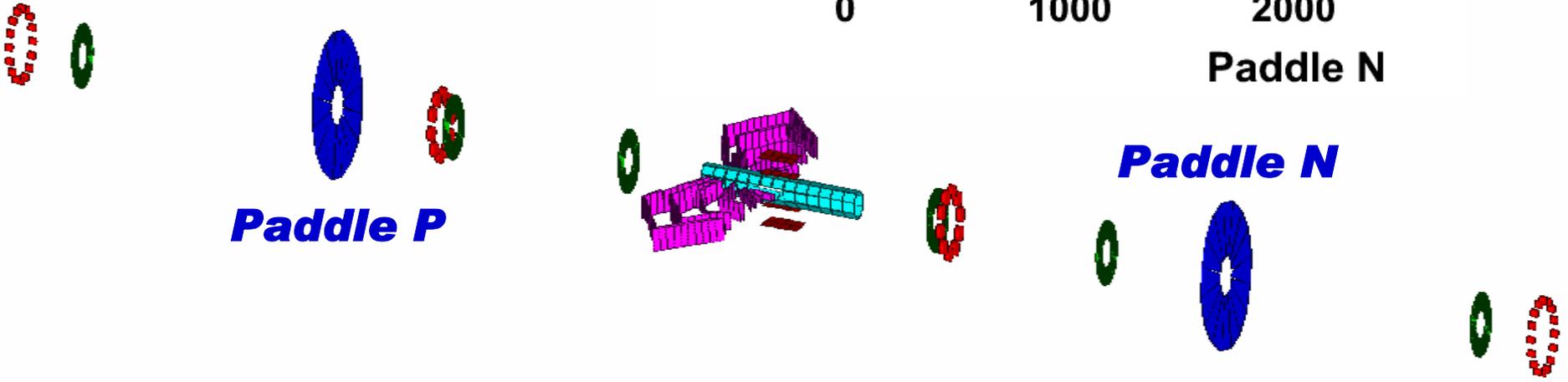
Some pileup evident.

**Inefficient pileup
trigger firing at
30% of DAQ rate**

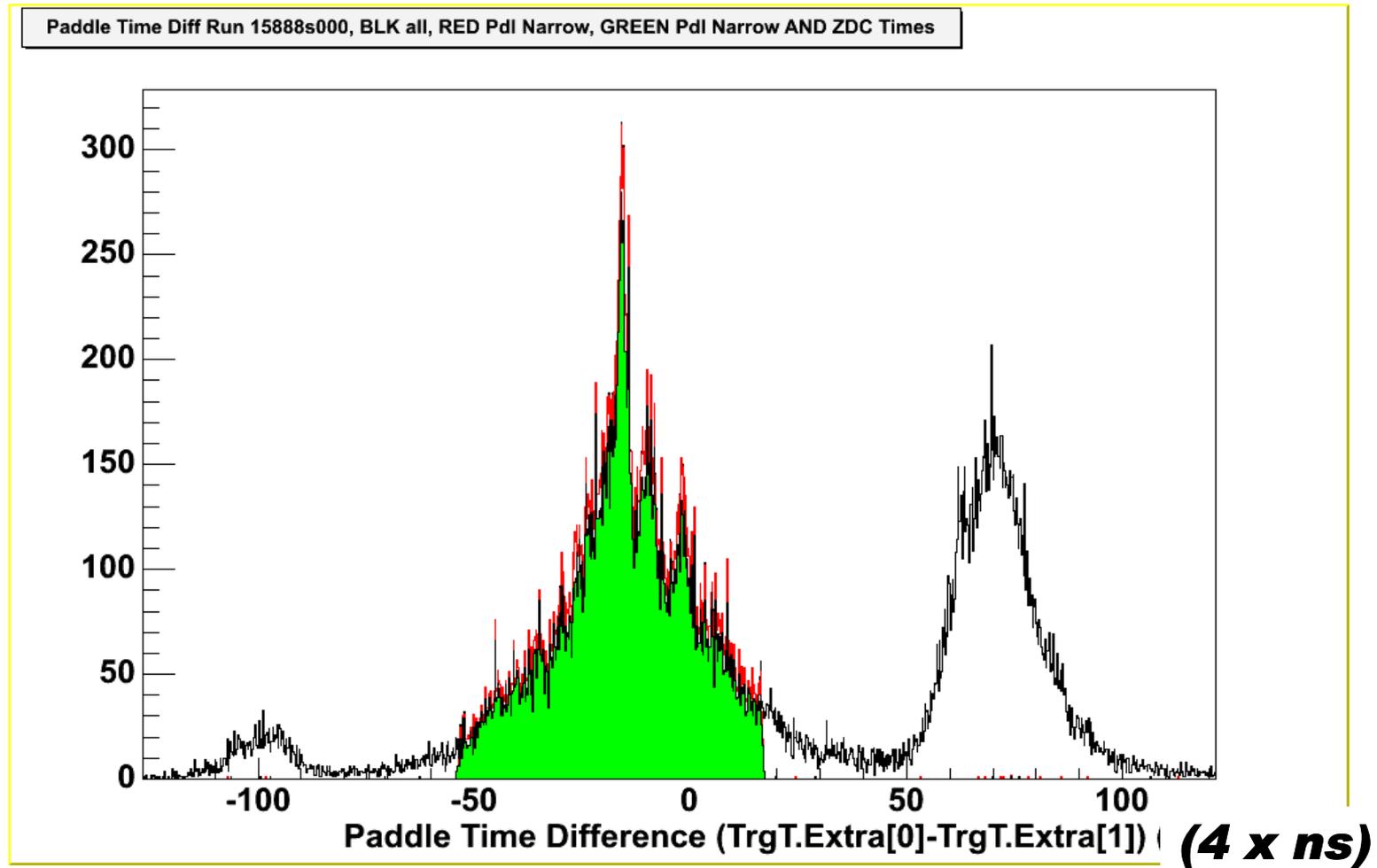


Paddle P

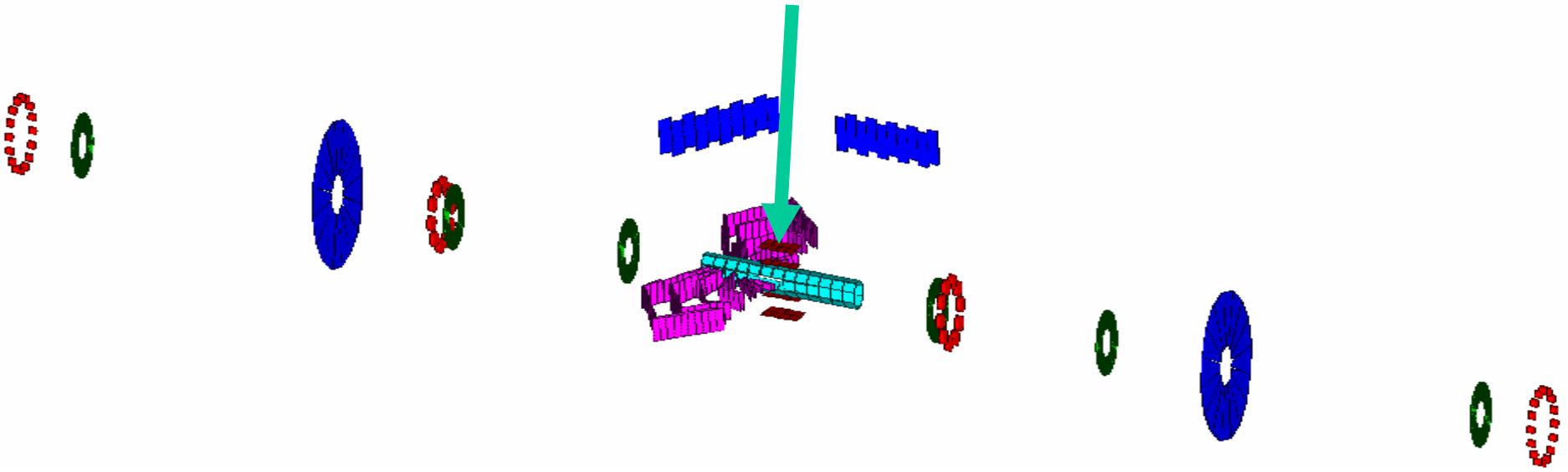
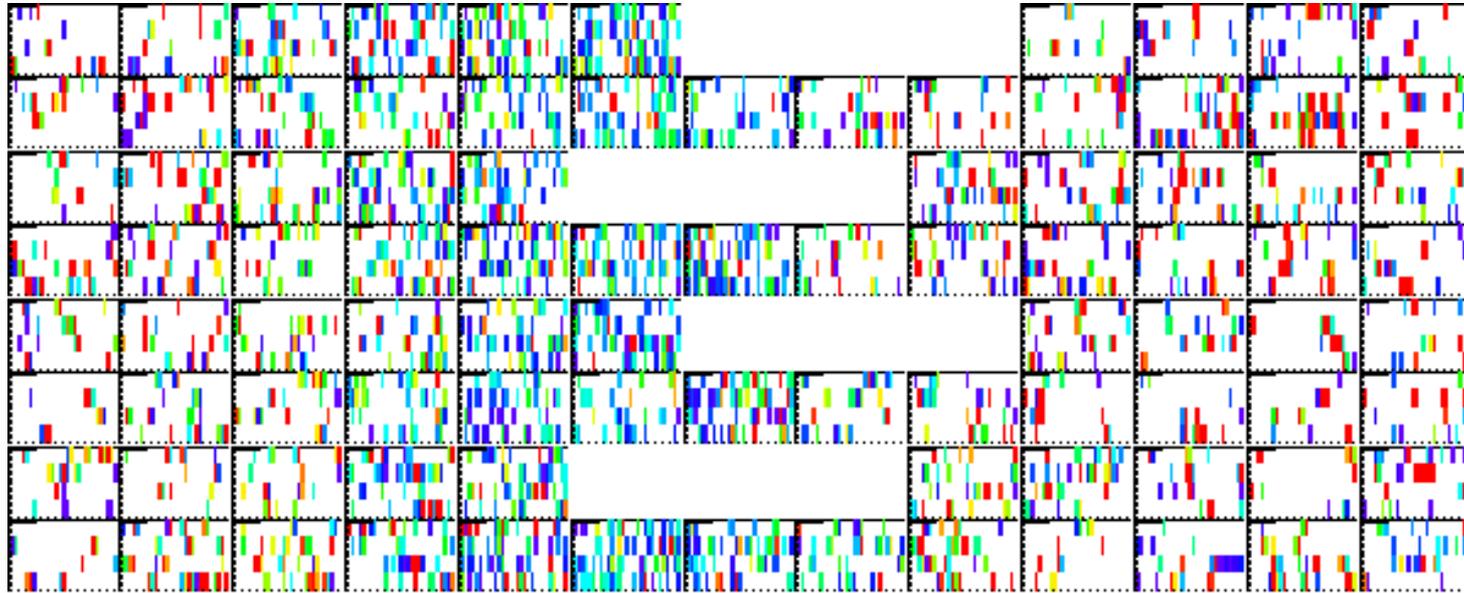
Paddle N



First Collisions (Tues morning)

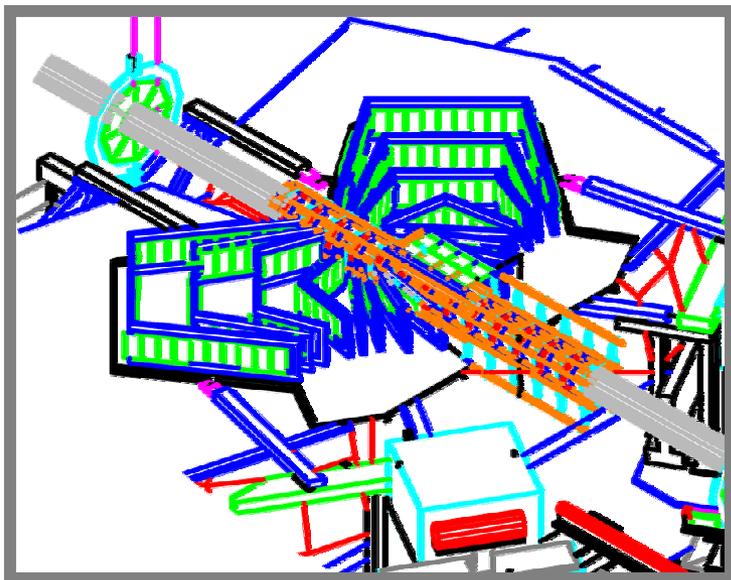


Cu+Cu Event Display



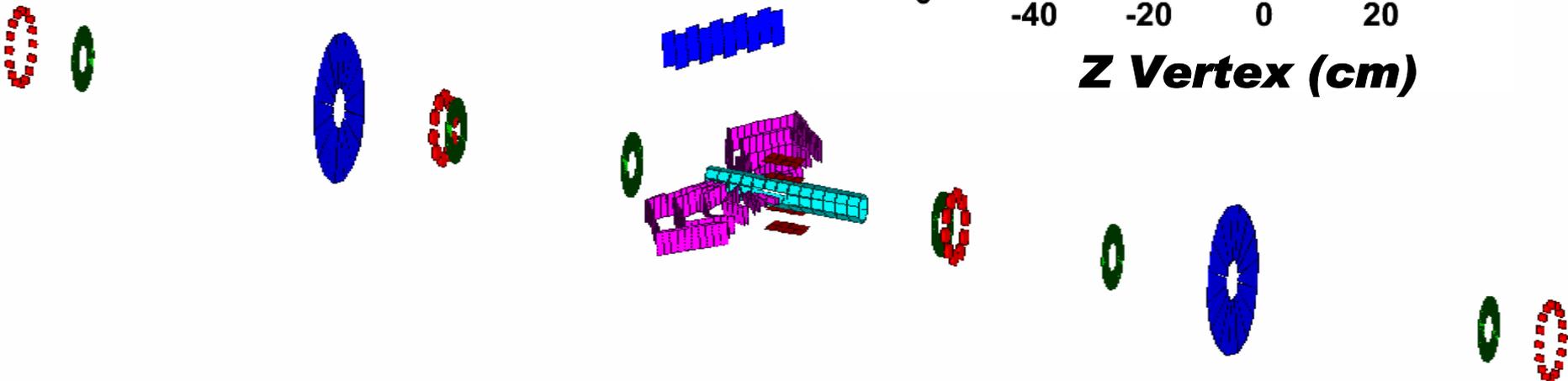
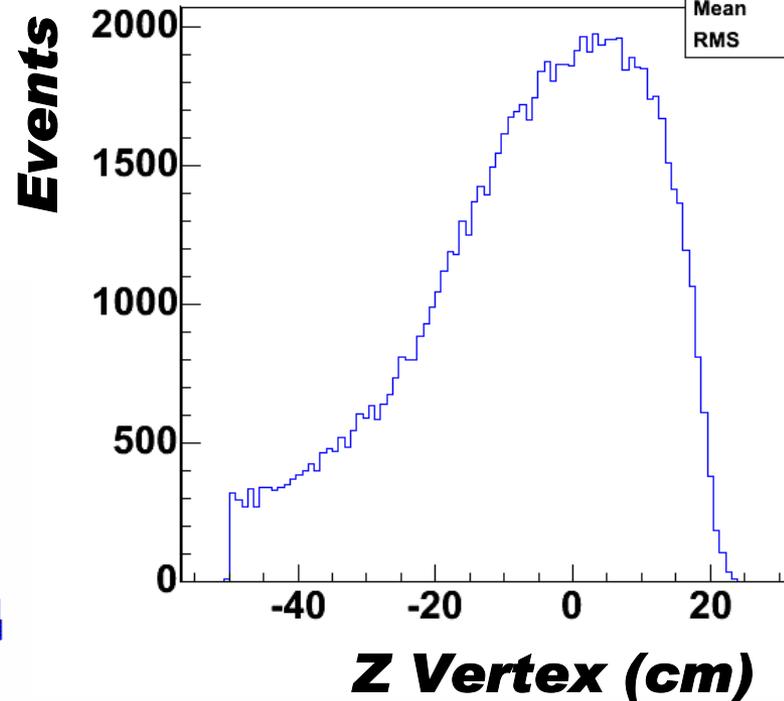
Vertex Distribution

- Production ran automatically



RMSSelVertex.vz {RMSSelVertex.vs==0}

htemp	
Entries	90045
Mean	-6.139
RMS	16.26



Plans

- **Expecting magnet work tonight**
 - **Look at curved tracks in spectrometer**
 - **Prepare for production running & analysis**
- **We are ready as we can be for whatever luminosity RHIC can deliver**
 - **Will start to implement vertex triggers to reduce L0 rate of large-z events**
- **We are actively looking at pileup – both from within and outside of the nominal bunch crossing**



Run Conditions

- **Required run conditions to achieve goals – luminosity, β^* etc.**
 - **Assuming $\beta^*=3\text{m}$ for 200 GeV as last year**
- **Special requests**
 - **Fixed-length stores are clearly optimal for overall operation of PHOBOS**
 - **We would like additional time (e.g. 45 minutes) in a store if there is a substantial (>30 min) vacuum breakdown.**
 - **Similar to last year – times should be appropriate for the actual behavior of the machine**
 - **(pp): Special 400 GeV run as early as possible.**

Physics Goals/Needs for Run 5

- **Physics goals for planned Cu-Cu run**
 - **Energy** and centrality dependence for
 - 4π observables (multiplicities, flow)
 - Particle spectra
- **Needs (Cu-Cu)**
 - ~ 1 Billion events @ 200 GeV (1.5-4 nb⁻¹ or 2+8 weeks)
 - ~ 150 Million events @ 62.4 GeV (2 weeks)
 - 1 day @ 22.4 GeV (injection)

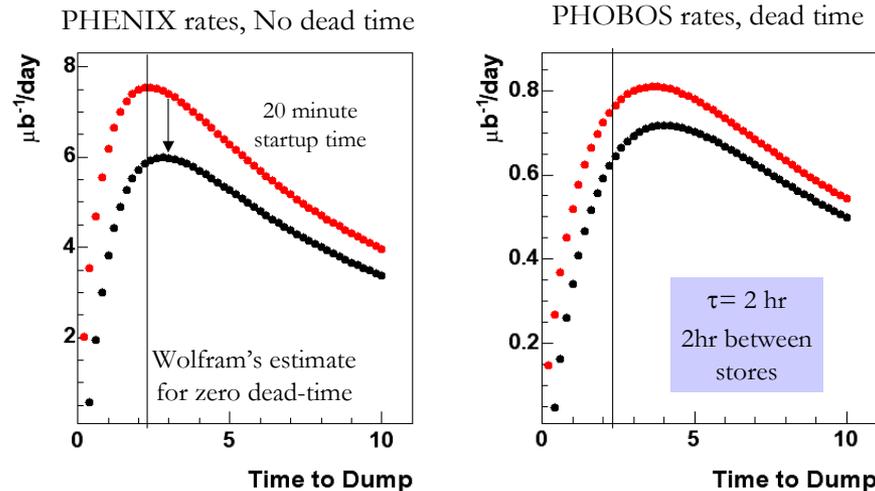
Fixed-Length Stores

- **This was a major issue...last year!**

Dumping Stores

We want a quantitative, strategic approach to dumping stores

- working on realistic calculations to help with this



Peter Steinberg

RHIC Weekly Planning

01/07/04

- **Good for RHIC, Good for experiments**
 - **Optimize timing injectors & AGS**