



André Masson "The Sun" (1938)

“There are no forms, no objects.

There are only events – outbursts – apparitions.”

André Masson (1896–1987)

Centrality, Multiplicity, Forward neutrons, Npart, High-pt ...

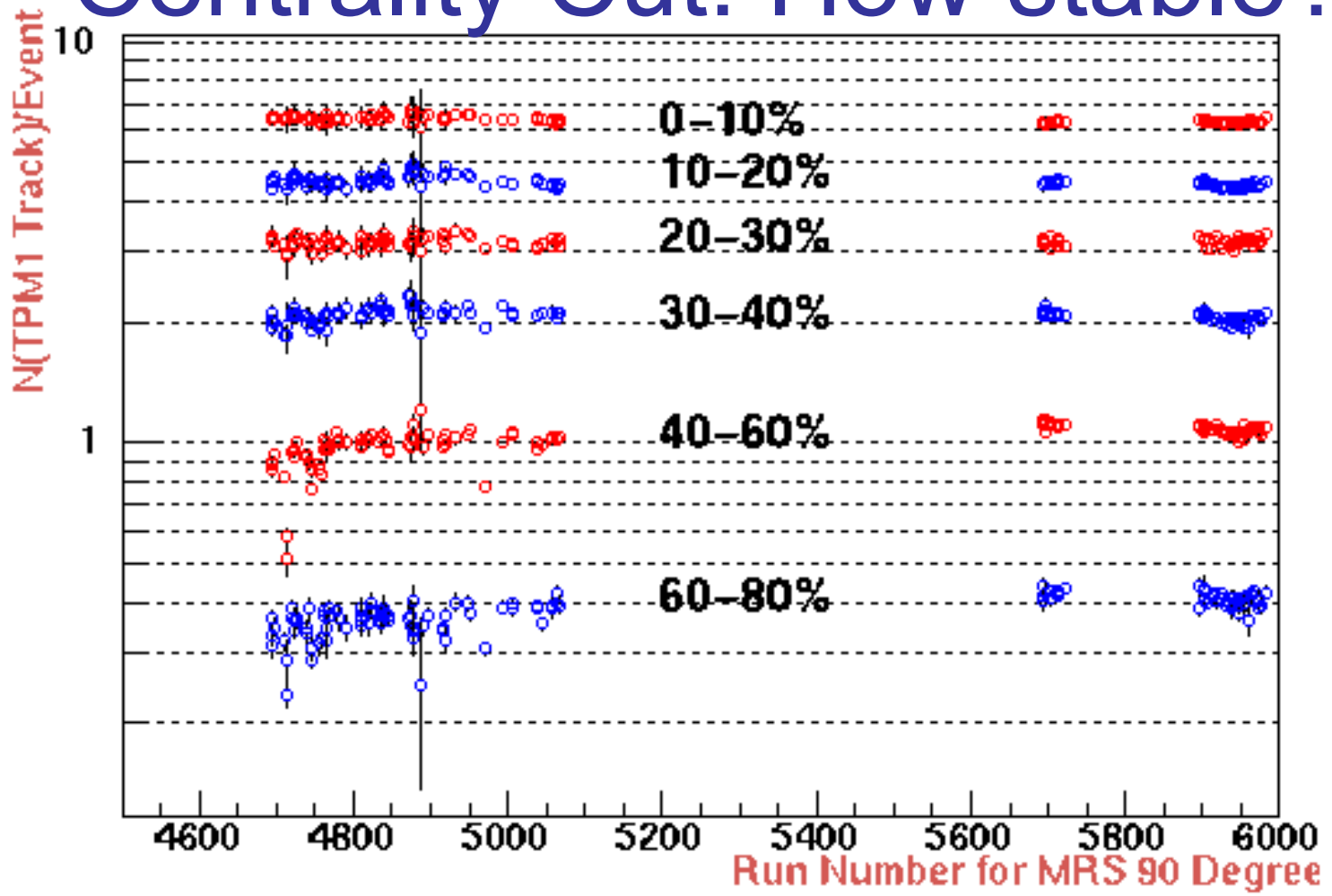
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Collaboration Meeting

Centrality Cut: How stable?

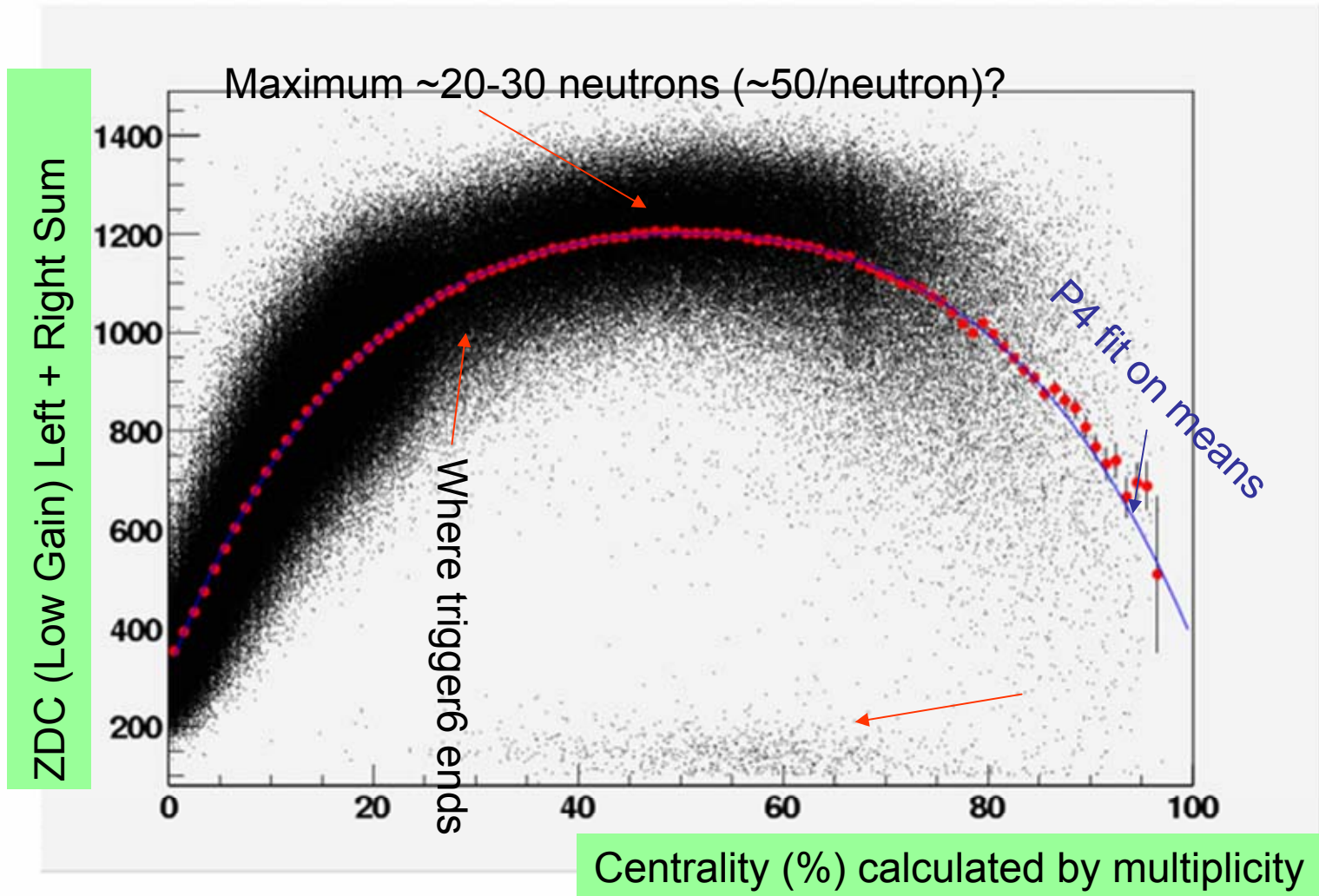


- Centrality Cuts (multiplicity) with the latest calibration
- No scale-down factors considered (centrality cut fine enough?: see 20-30%)
- Some small run dependencies: (Earlier ones, ~run5900)

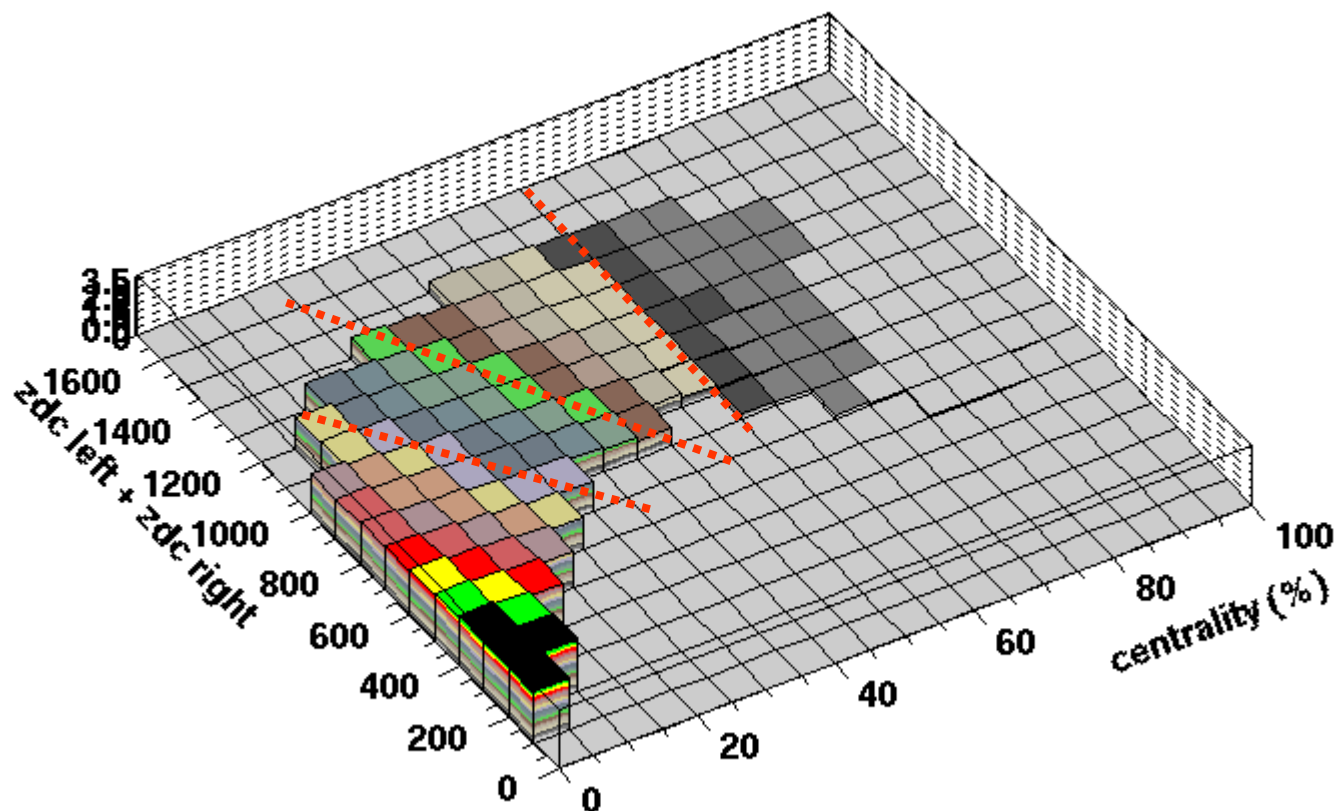
Resolution of Centrality Cut

Centrality (%)	RMS/ $\langle N_{\text{Track(TPM1)}} \rangle$
0-10%	1.7%
10-20%	2.4%
20-30%	2.5%
30-40%	3.4%
40-60%	8.9%
60-80%	9.4%

ZDC vs. Multiplicity



Double Cut?

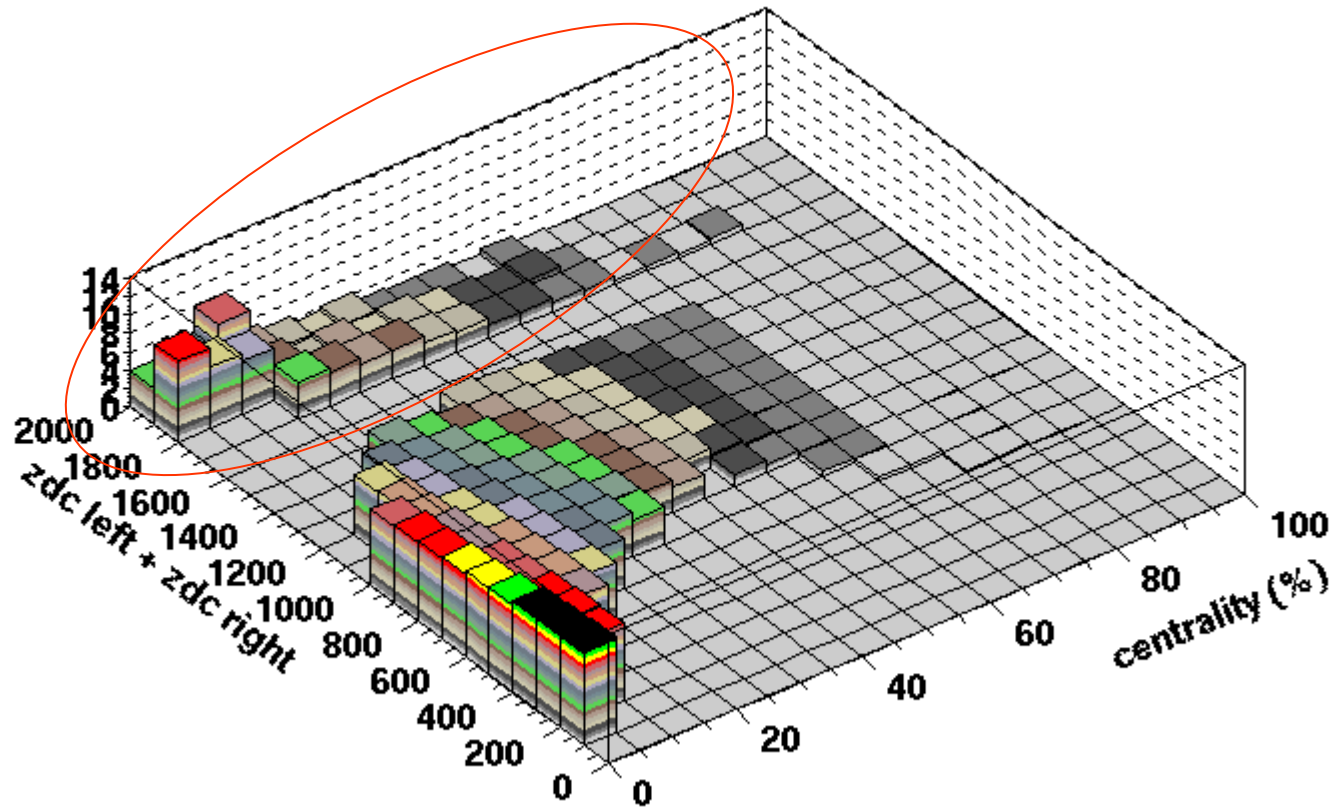


- N(T1 track) for (almost) all data from run02
- Statistical error <2% plotted
- Double cut seems better for yields at FS

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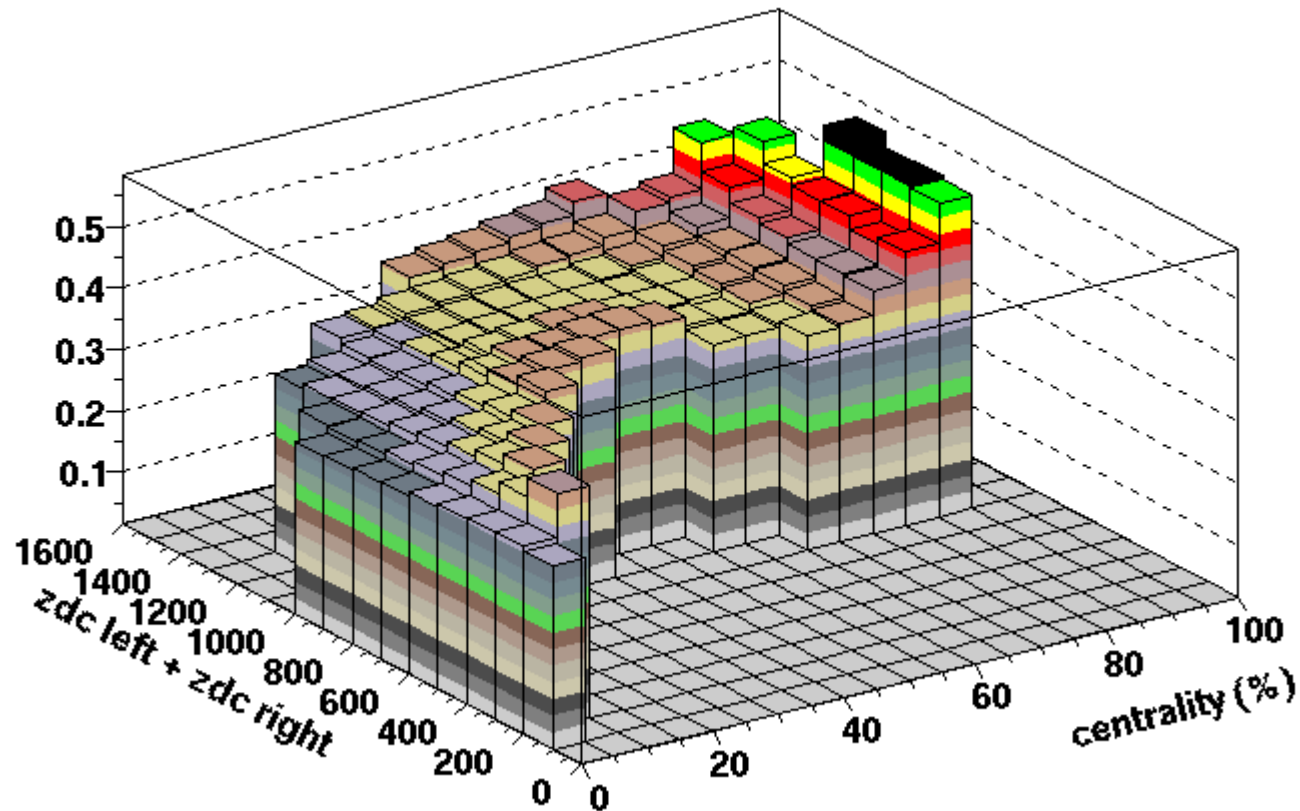
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MRS



- N(TPM1 track) for the (almost) all data from run02
- Statistical error <2% plotted
- Double cut for MRS and FS?
- High-gain ZDC events above ZDC sum > 1600?

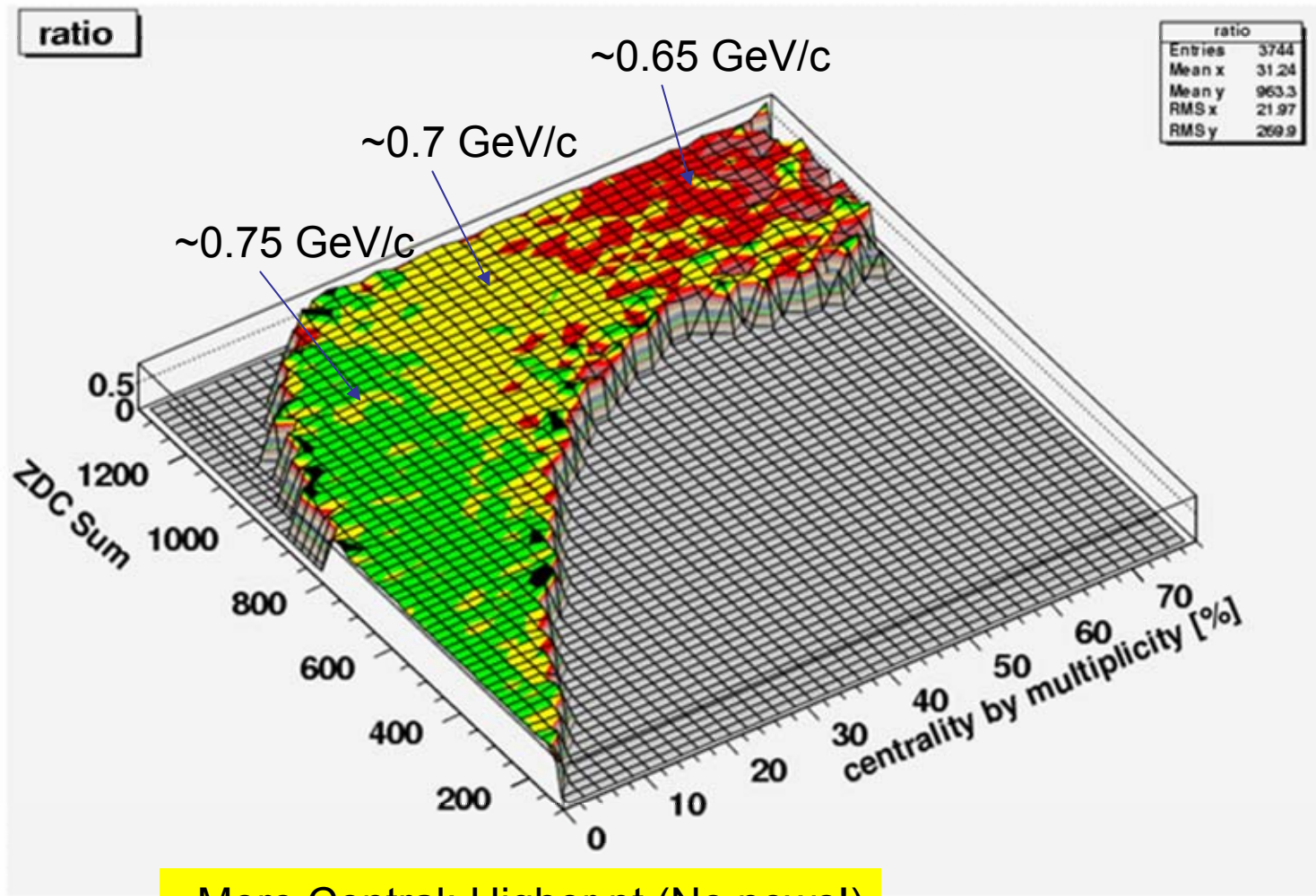
Npart Multiplicity $\Delta dN/d\eta$



- $N(\text{T1 track})/N(\text{TPM1})$ for all data (various angle combinations)
- Statistical error $< 2\%$ plotted
- Width of $dN/d\eta$ grow as go peripheral (confirm Si results)
- Width of $dN/d\eta$ quite sensitive to ZDC (Npart)?
- Interesting dynamical information from ZDC?

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mean p_T

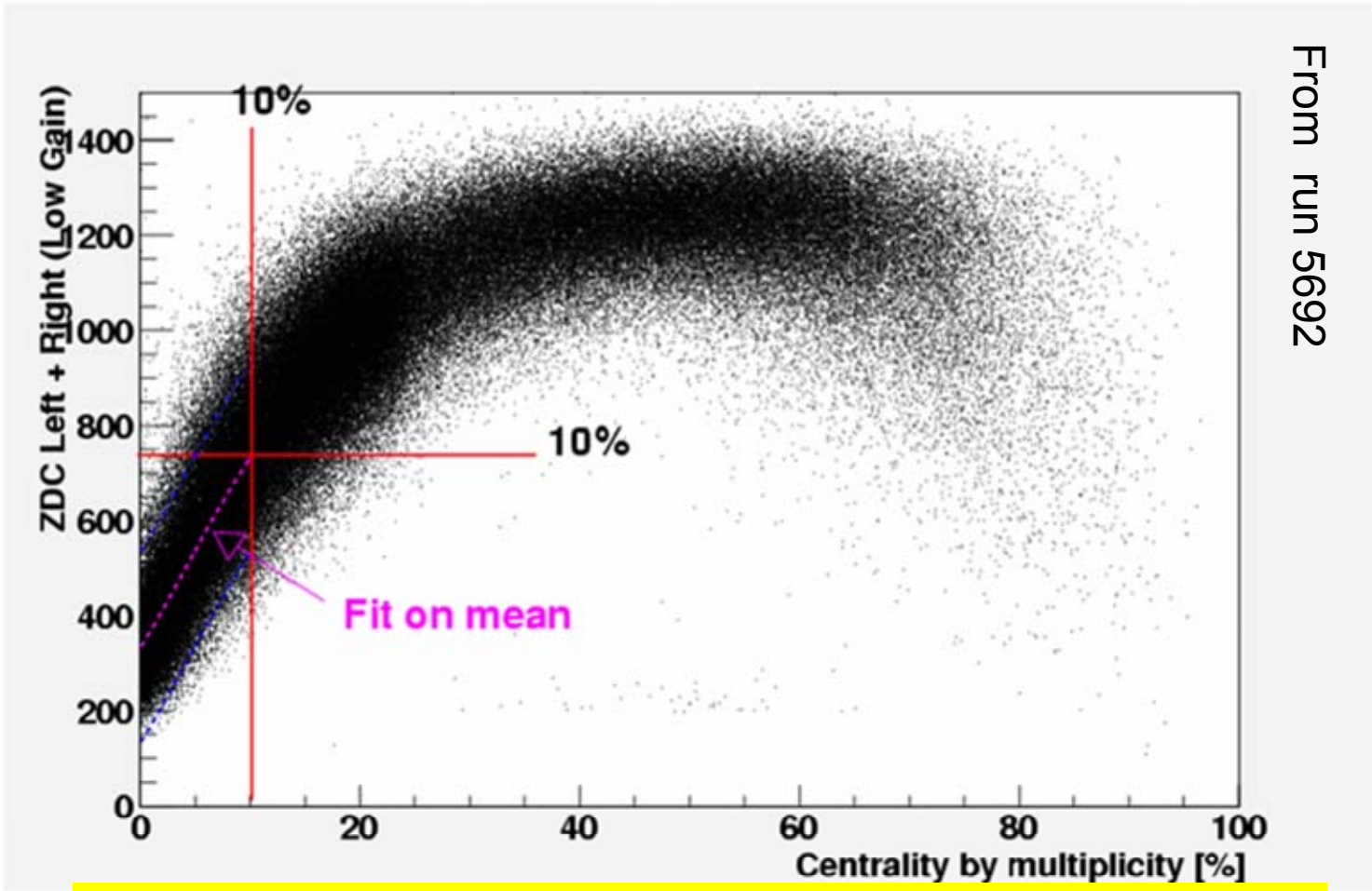


- More Central: Higher p_T (No news!)
- No clear double correlations seen

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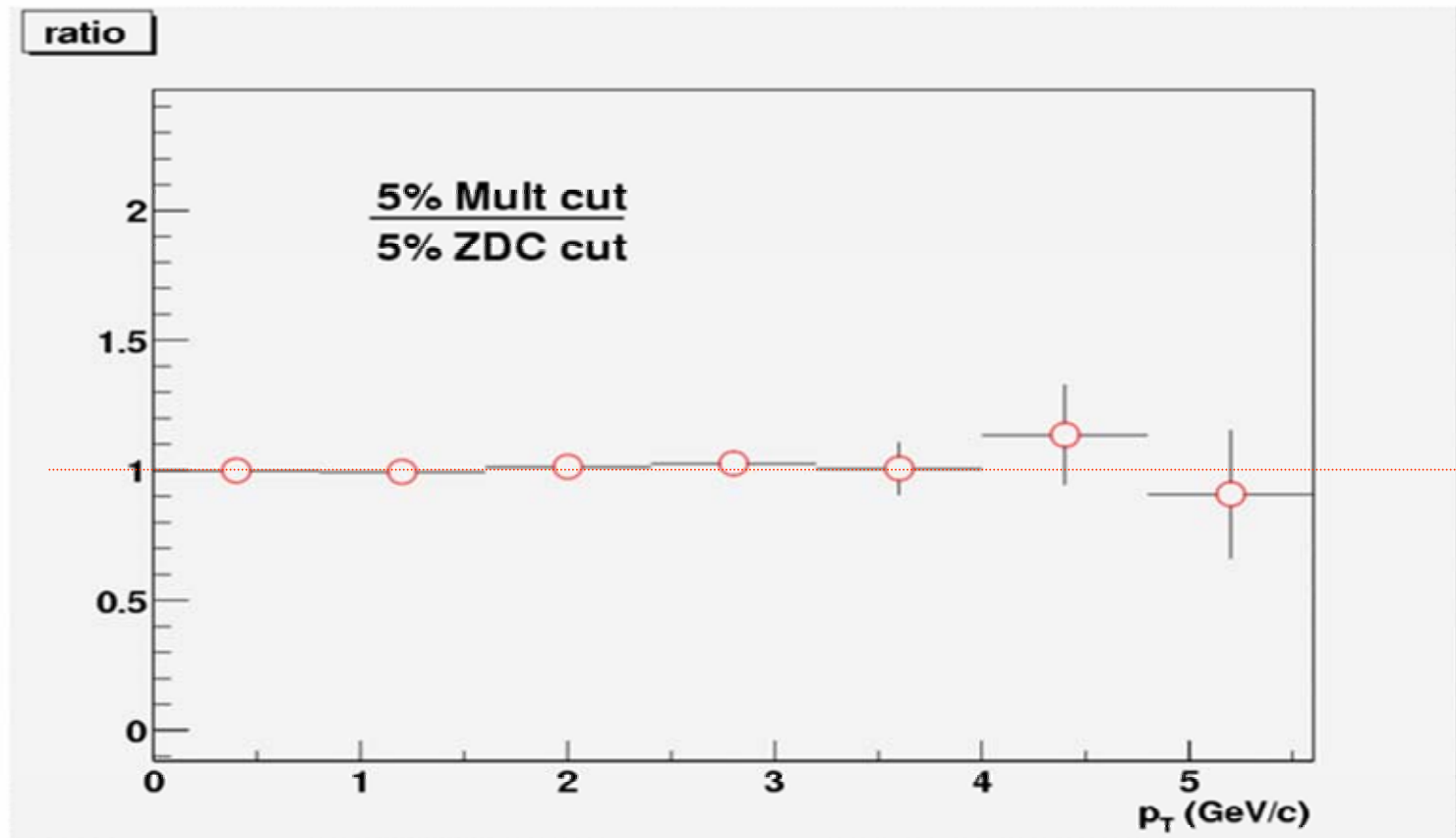
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Multiplicity vs ZDC

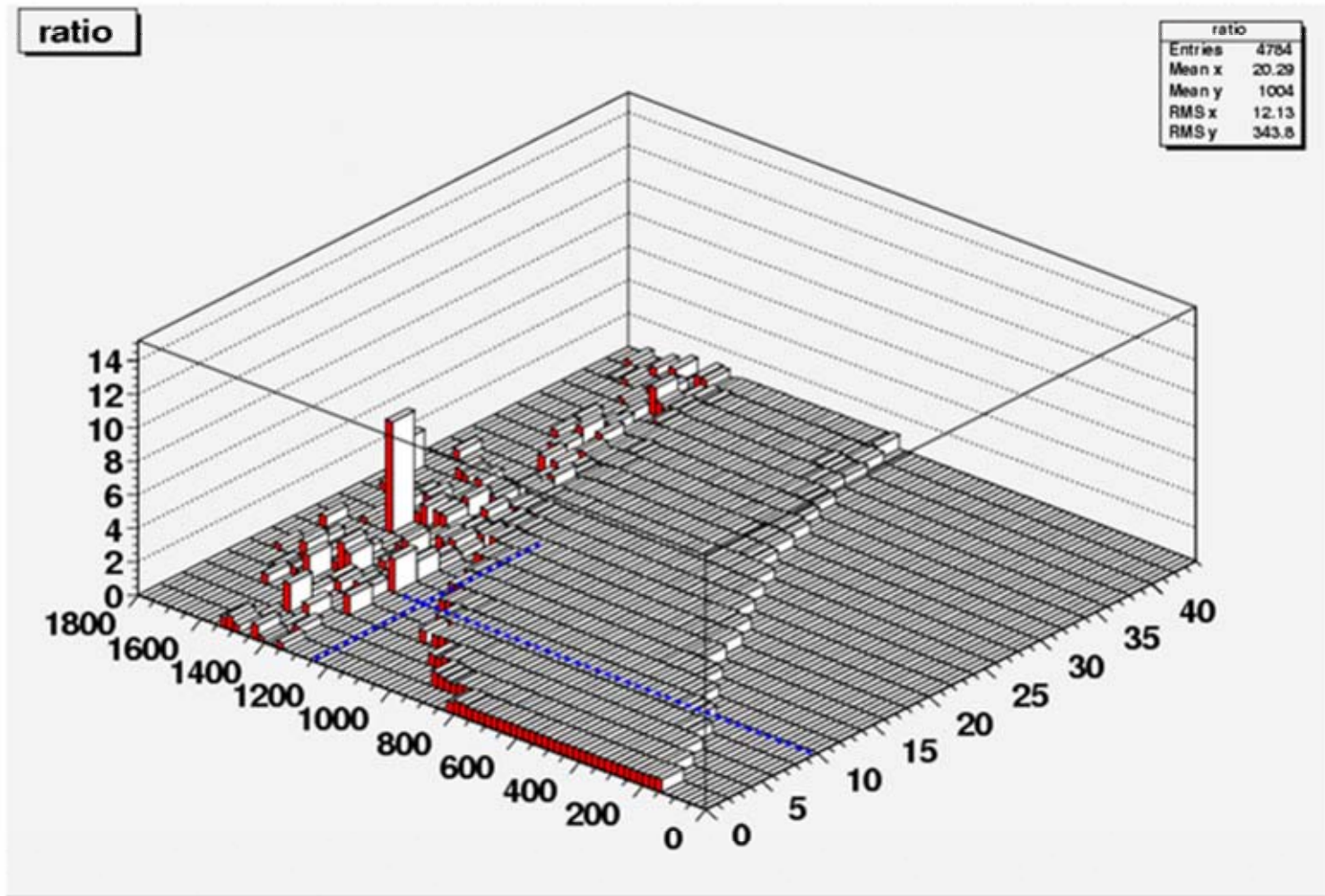


- At central (high multiplicity): ZDC dependence
- Separation 400: ~ 8 neutrons?
- ZDC more sensitive to N_{part} for “central” events?

ZDC cut vs Multiplicity Cut



Cut out



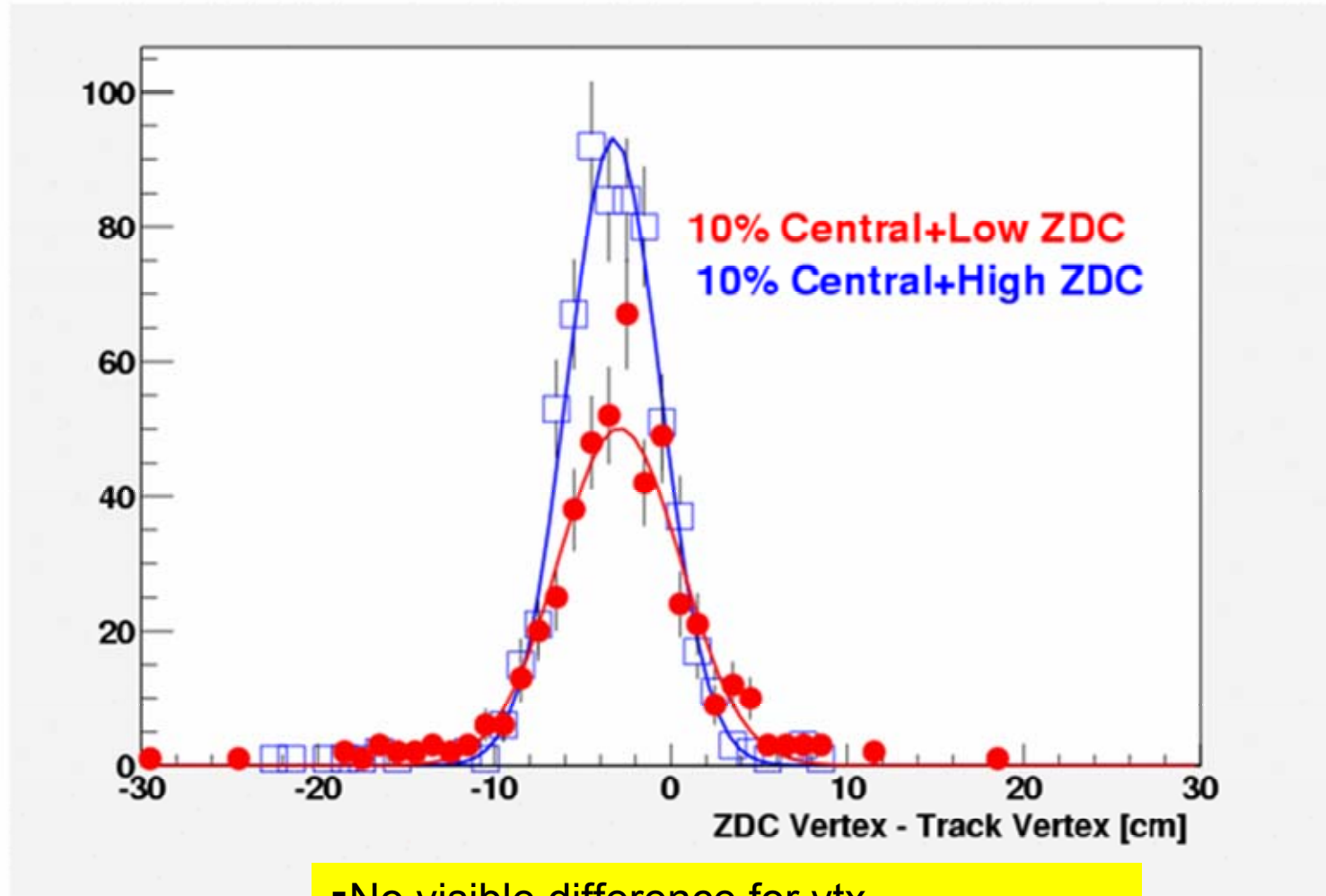
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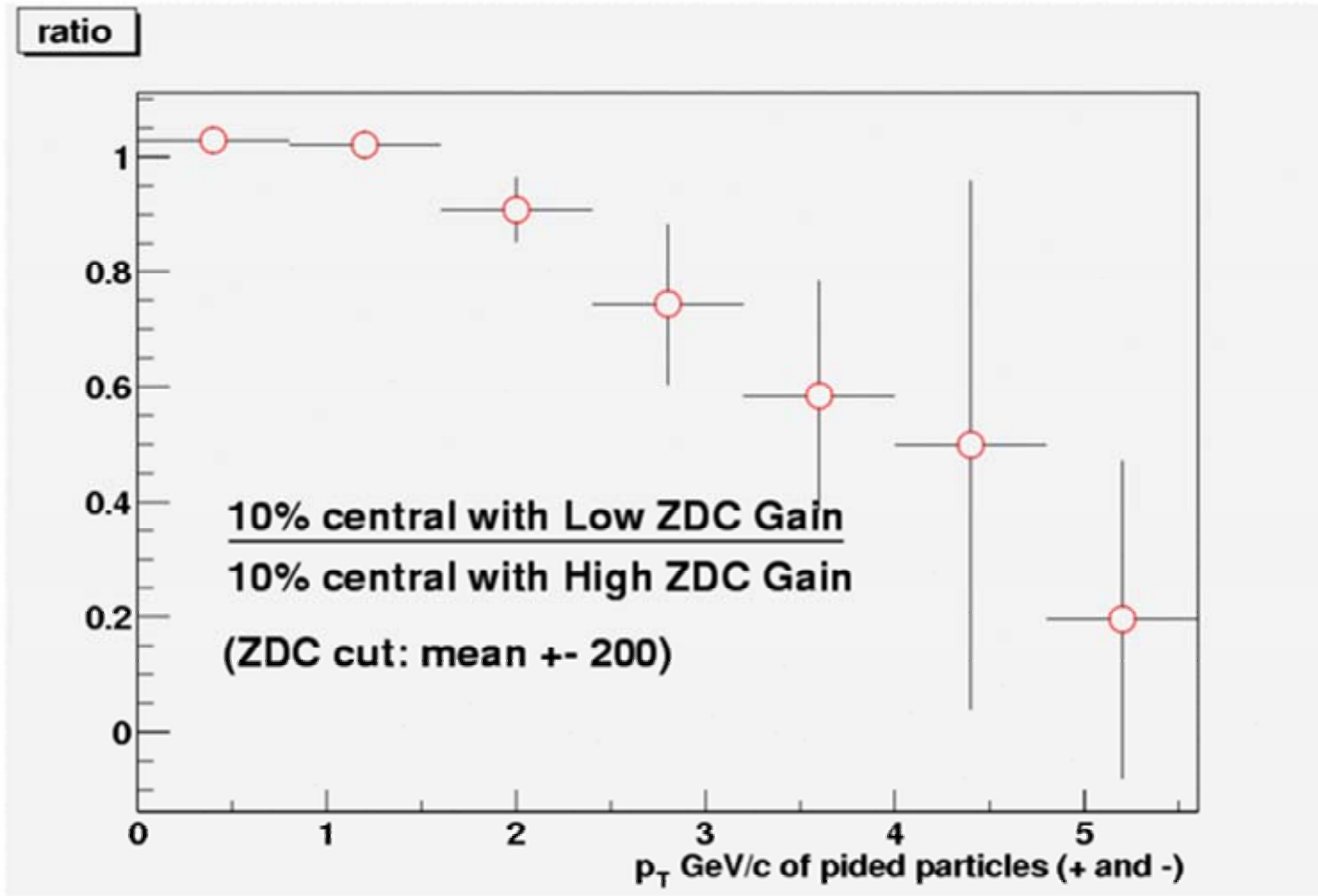
Centrality Bias?



- No visible difference for vtx
- Some other parameters? (MRS PID talk)

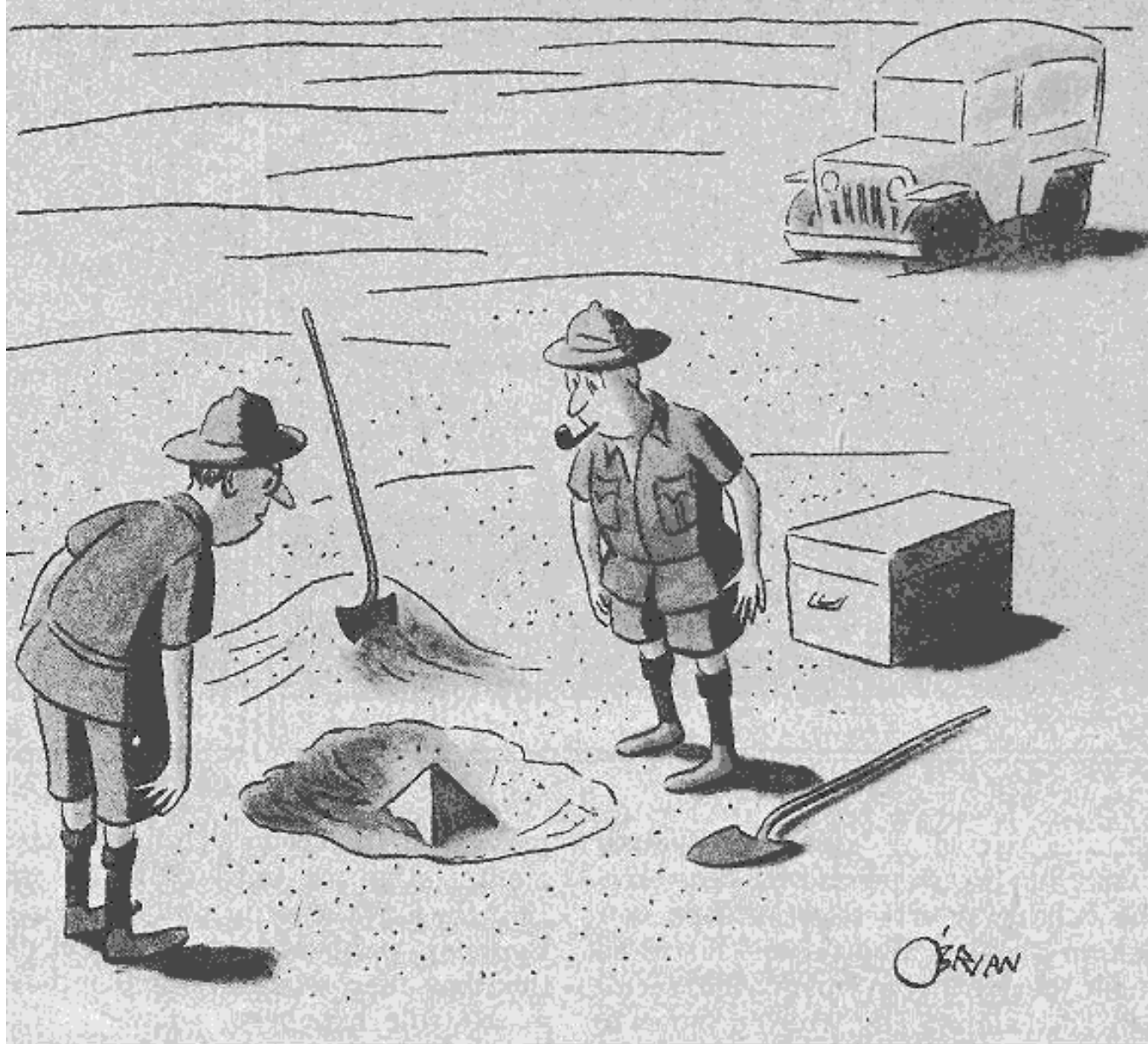
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High-pt vs Multiplicity/ZDC



What does that mean?

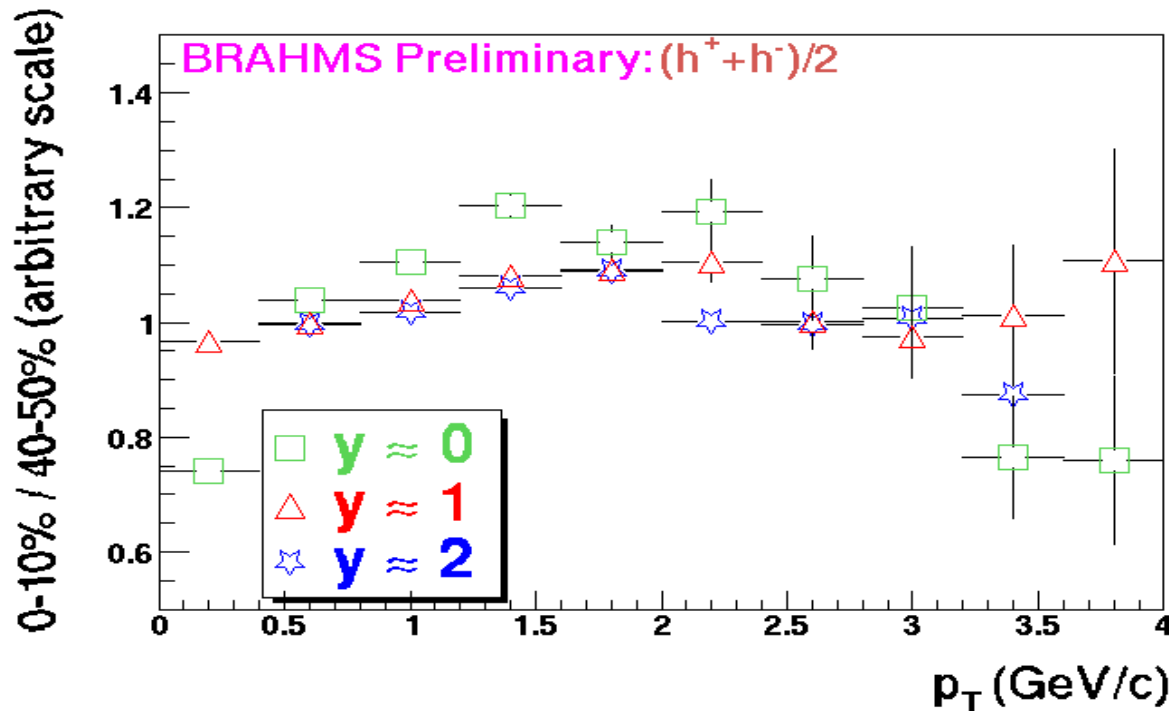
- Strong ZDC energy dependence for 0-10% central (Multiplicity) events
- No structure at low p_t
- “Again” at $p_T \sim 2 \text{ GeV}/c$ (v_2 , p/π crossing, high- p_t suppression)
- N_{part} is a very sensitive parameter for suppression for hard (gluonic) process?
- Other observables sensitive to this?
- Interesting physics or some artifact?



"This could be the discovery of the century. Depending, of course, on how far down it goes."

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Rapidity Dependent High- p_T Suppressions?

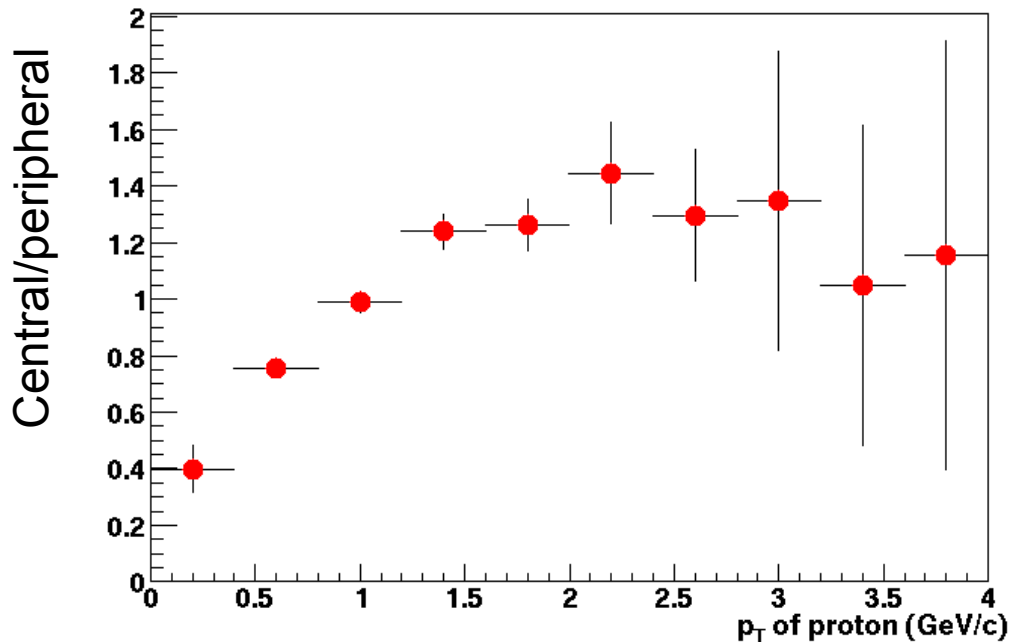


- High- p_T suppressed at $0 < y < \sim 2$
- Systematic Error $\sim 15 - 25\%$
- No significant rapidity-dependence within systematics

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High-pt p+pbar suppression(?)



- pt ratio of Central/peripheral for p+pbar
- Normalization:
 $N(\text{central})/N(\text{peripheral})=1$
- p and pbar: $0.88 < m_2 < 2.0$ to exclude kaons at high p
- Central: 0-10%
- Peripheral: <40% +ZDC
Sum < 1200
- High-pt over 2 GeV/c: Flat-to-suppressed
- Need more statistics at peripheral