

First ZDC results

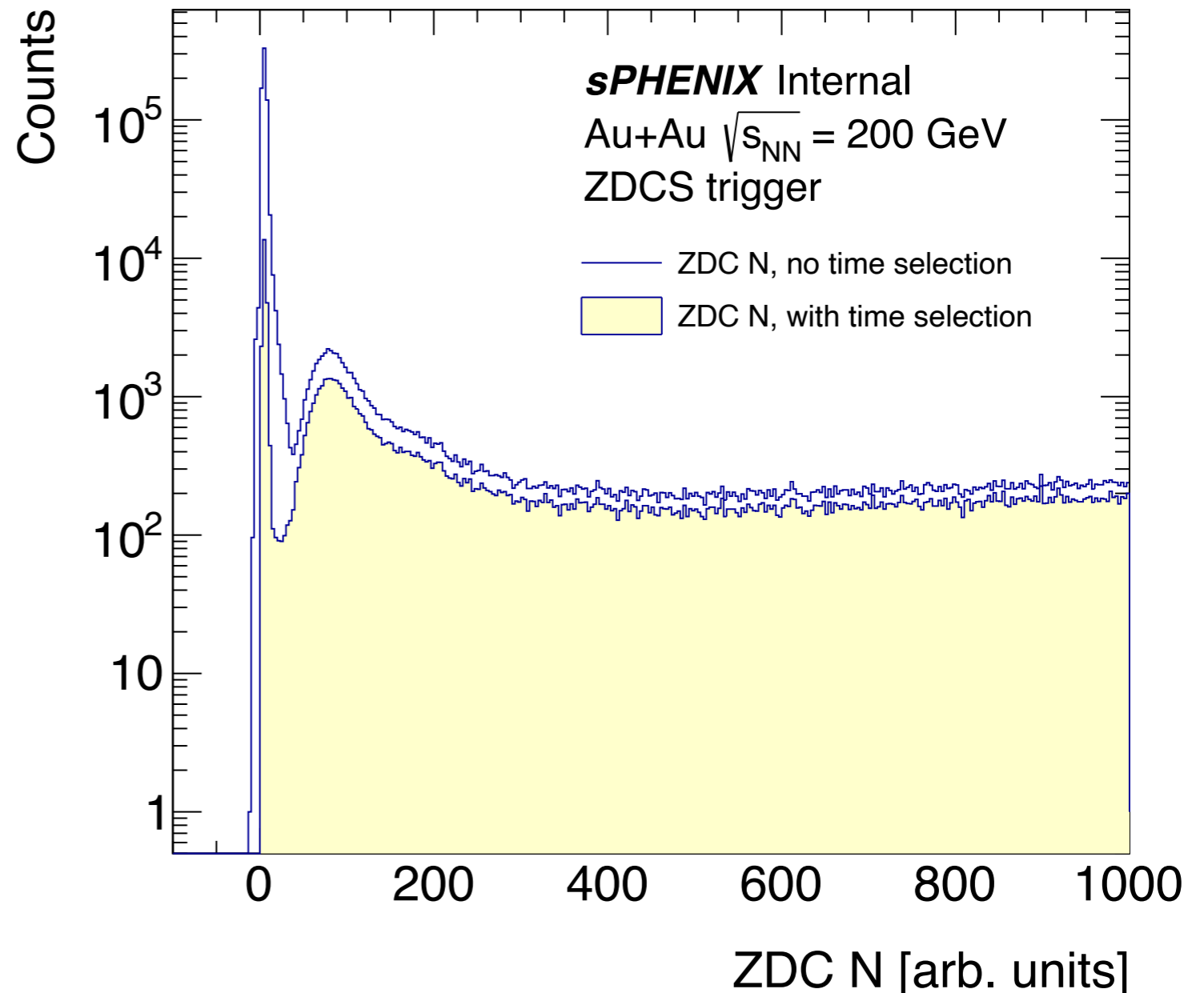
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ZDC standalone data taking

- **Data taken in ZDC standalone mode on Tuesday, 6 June**
- **Replaced ZDCNS (set up previously by Mickey, thanks!) with ZDC S only**
 - Thanks to John K. for help with this (IOU one 50 Ω terminator)
 - Thanks to Dan for setting up the busy
- **For ZDCS trigger, RCDAQ stable and ran at 4.3 kHz**
 - Took 1M events, 31 samples/waveform
 - Changing to ZDCN led to unstable RCDAQ server, potentially due to issues with the busy. Data taken last night tried to use 16 samples, which led to problems.
- **Processed with John's waveform processing code (wd409), so not yet official sPHENIX code**
 - Amplitudes are peak - pedestal for each channel
- **Goal was to isolate 1n peak by triggering on opposite side**
 - Turns out the per-side thresholds are at around 5n
- **Currently only utilizing analog sum from Steve Boose's summer board**
 - Next steps will be to iteratively optimize the 1n peak width using linear combination of three towers (code ready, from ATLAS)

Neutron peak(s) in ZDC N

- Analog sum peak amplitude distribution (in ADC units, is accidentally \sim GeV!)
- Taking all ZDC N signals gives a clear peak, but a very broad noise peak
- Selecting signals in the expected sample region (near 6) substantially improves things
- Possible $2n$ peak visible, as a kink just below $\text{ADC}=200$
 - Good suggestion from Mickey to veto on MBD to remove residual hadronic processes
 - TBD when combined data available!



2D correlation

- **ZDC S only for now**
 - ZDC N data taking on Thursday, 8 June misconfigured 16 sample running
- **Cutoff on ZDC S is from the trigger**
- **Peak required to be near sample 6 (within 0.2 sample)**
- **Clear visible stripe from 1n (and maybe 2n) in ZDC N from Coulomb dissociation**
 - On there too, but not easy to see here!
- **Diagonal correlation is from hadronic HI processes (spectators)**

