INTT Commissioning Plan

RIKEN/RBRC

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Commissioning without beam

1. Apply 100V bias. Diagnose any over current channels.
2. Calibration run ladder-by-ladder. Find possible mis-cabling.
3. Diagnose missing channels and try to recover
4. Random trigger noise run.
5. Tuning alarm range of LV/HV control panels.

Commissioning with beam

1. Mis-cabling check by the geometry
2. Diagnose missing channels and try to recover
3. Check yield uniformity
4. Gain matching between ladders or fine tweak noise
5. DAC Scan
6. Bias Voltage Scan
7. BCO Timing Scan (Time-in) and then Phase Scan. How to confirm <1 BCLK Time resolution?
8. DAC0 threshold optimization. S/N evaluation.

Monitoring

1. Define online monitor. Develop and test anomaly (dead/hot channel) checker.
2. Establish flushing anomaly checker results to database.

Timing Spectrum Measurement

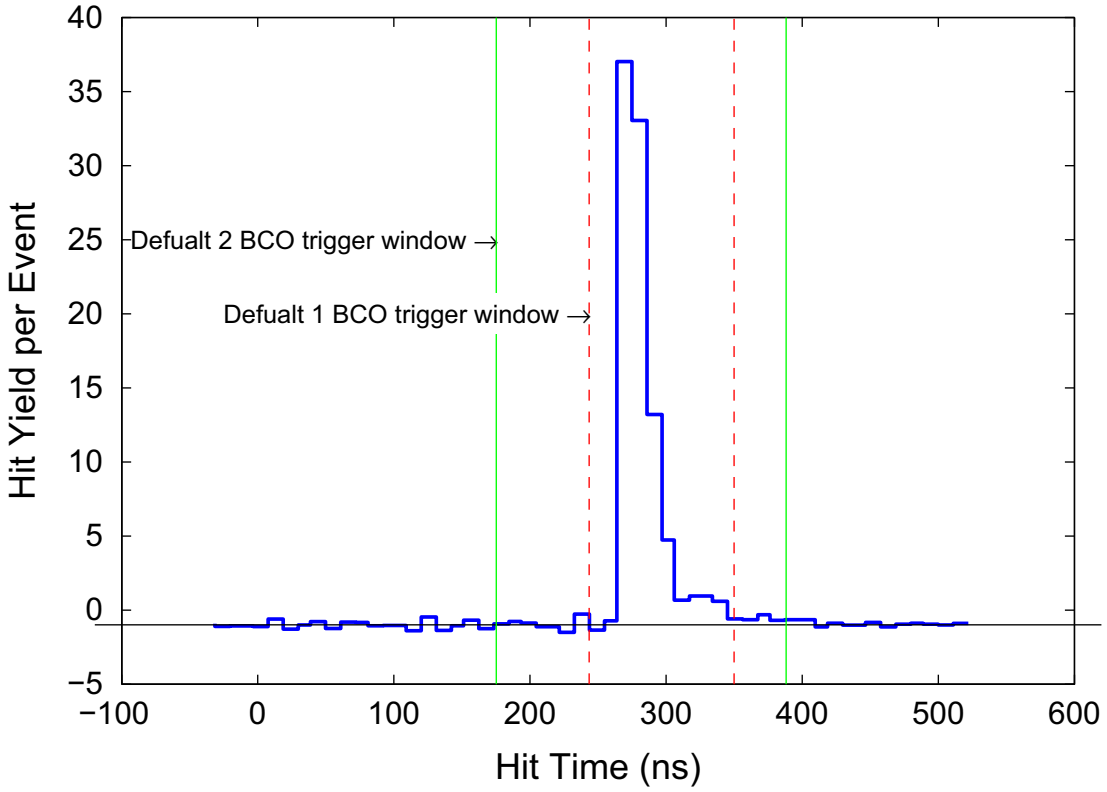

Fig. 32. Timing distribution of the FVTX hits relative to the RHIC beam clock.

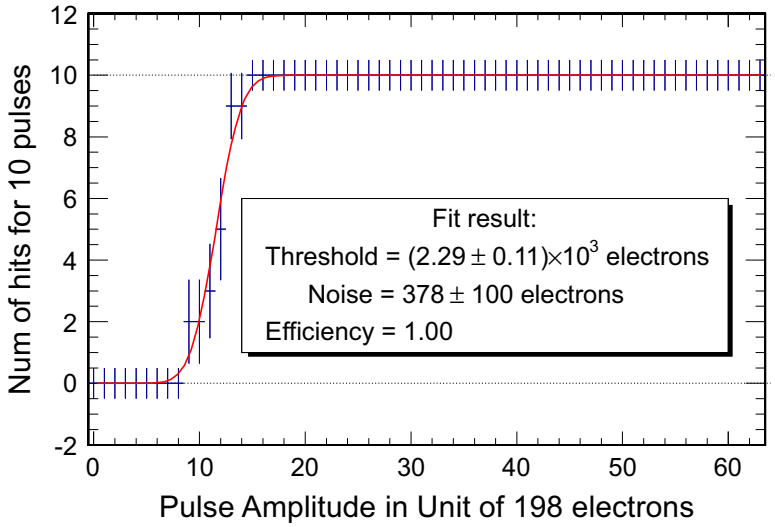

Fig. 35. Typical calibration data for a single channel (data points), fit with a normal cumulative distribution function.

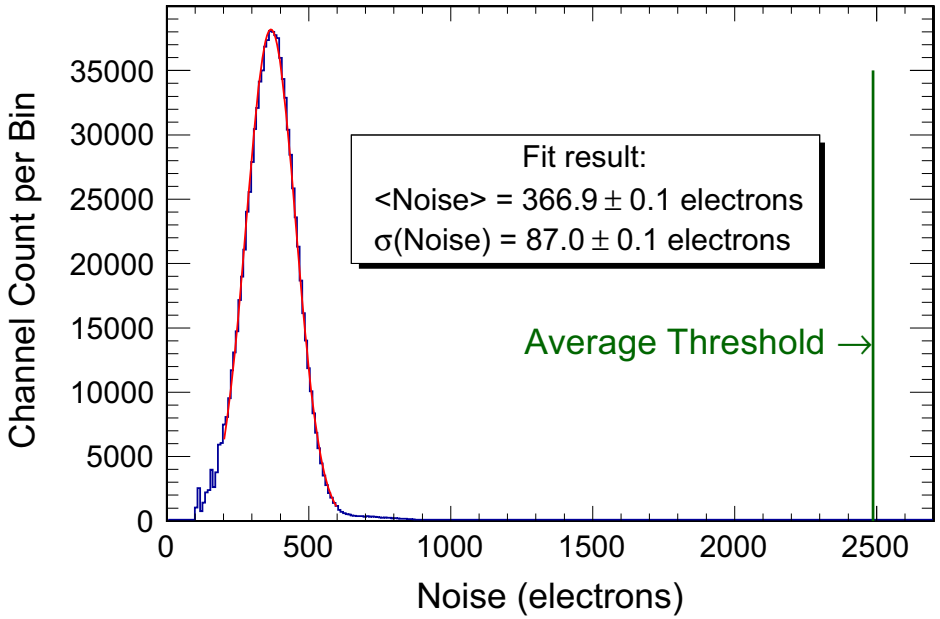

Fig. 36. Histogram of the noise parameter, σ, for all channels under operating conditions, in a typical calibration run. A Gaussian distribution fit to the data gives a mean noise level of 367 electrons. The nominal discriminator threshold at $\sim$2500 electrons is shown by the vertical line.