

STAR TPC System Test

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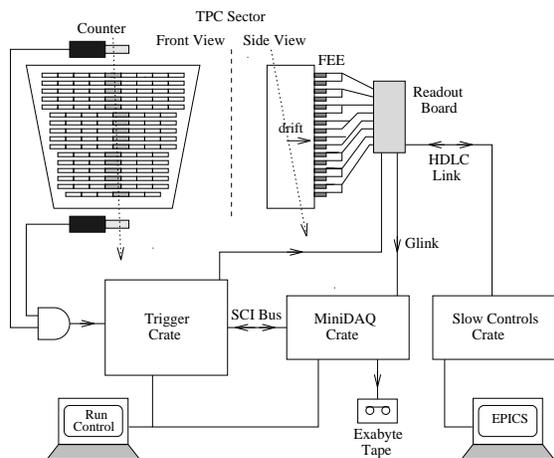


Figure 1: TPC system test cosmic-ray setup.

The STAR TPC system test assembles components at their current stage of development, testing functionality and interactions in a semi-realistic environment. Preliminary results have been reported at conferences [1], [2].

A typical setup is shown in Fig. 1. A TPC subsector is mounted in a field cage with a 10-cm drift region; 20 front-end cards and a prototype readout board instrument up to 640 pads. After a trigger, data are transmitted to “MiniDAQ” to be stored on tape and/or analyzed on line. System parameters are monitored by an EPICS-based slow controls system, while run control and a state manager coordinate the systems.

The front-end electronics gain, noise and stability have been studied, while cosmic-ray and laser tracks are used to debug and tune the analysis codes, as well as to test the hardware. A reconstructed track is shown in Fig. 2; rectangles mark the instrumented areas. A fully instru-

mented sector will soon be available for testing, leading to TPC field-cage tests in spring, 1997.

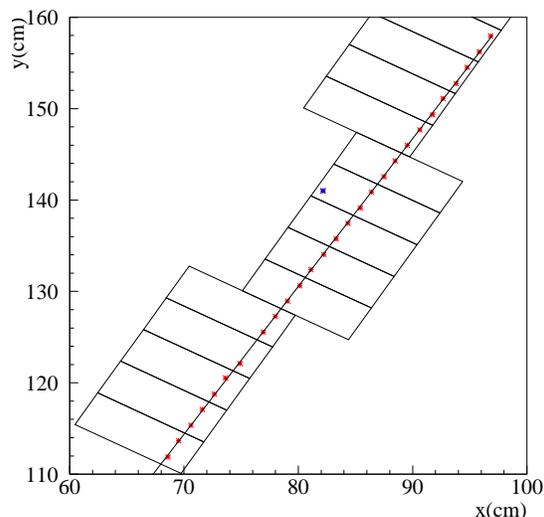


Figure 2: Reconstructed cosmic-ray track.

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References

- [1] Presented by I. Sakrejda, APS DNP Meeting, Indianapolis, IN., Oct. 2–5, 1996.
- [2] Presented by J. Chrin, IEEE Nuclear Science Symposium, Anaheim, CA., Nov. 3–9, 1996.