

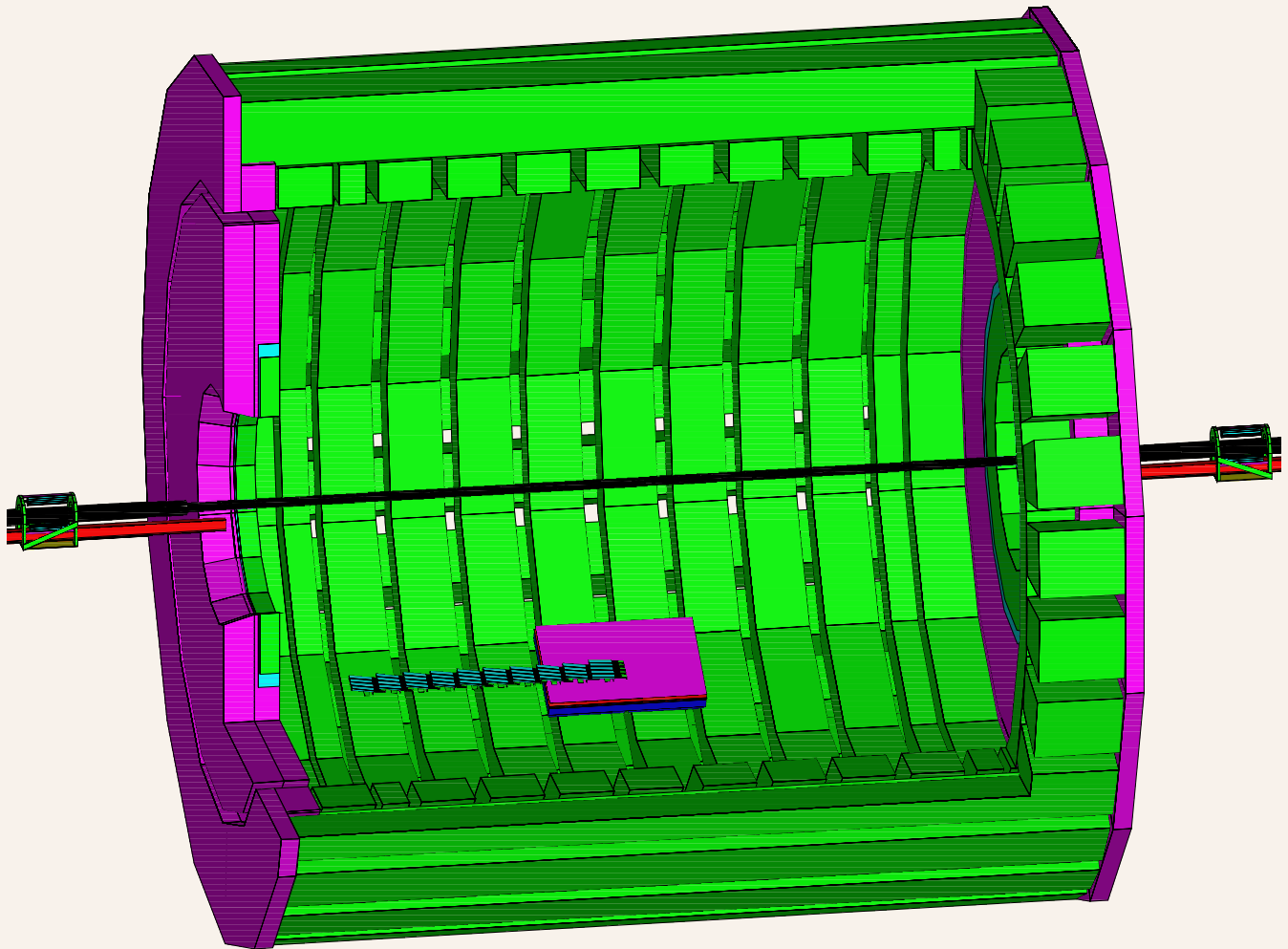


TOFp Status

W.J. Llope for the STAR-TOF Group

*RICE, CCNU/IHEP (China),
NASA-GSFC, Kent State, LBNL*

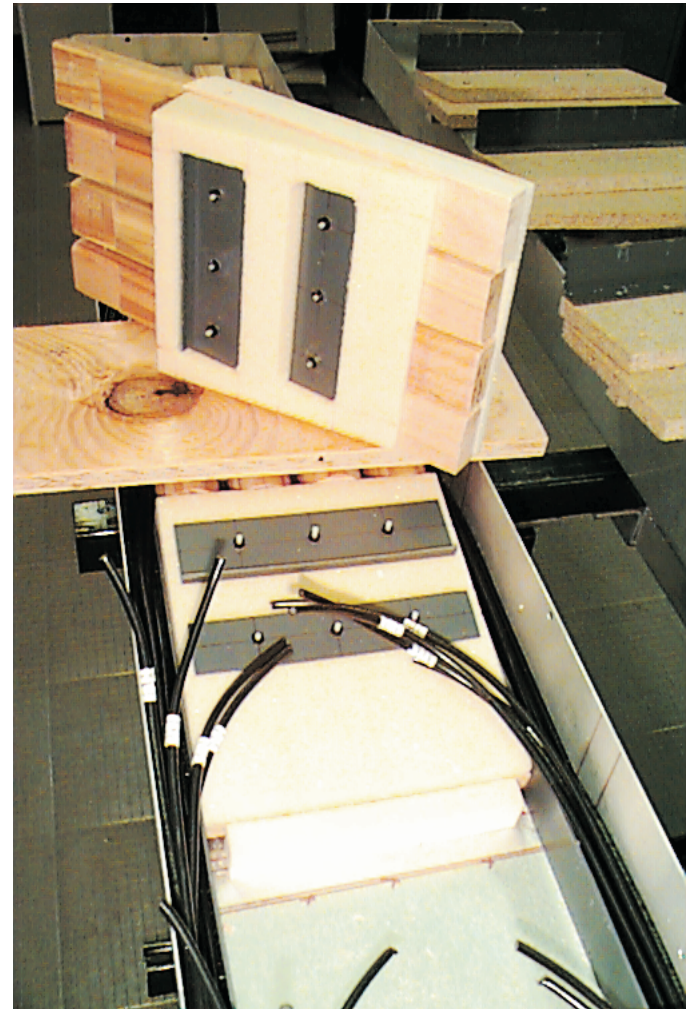
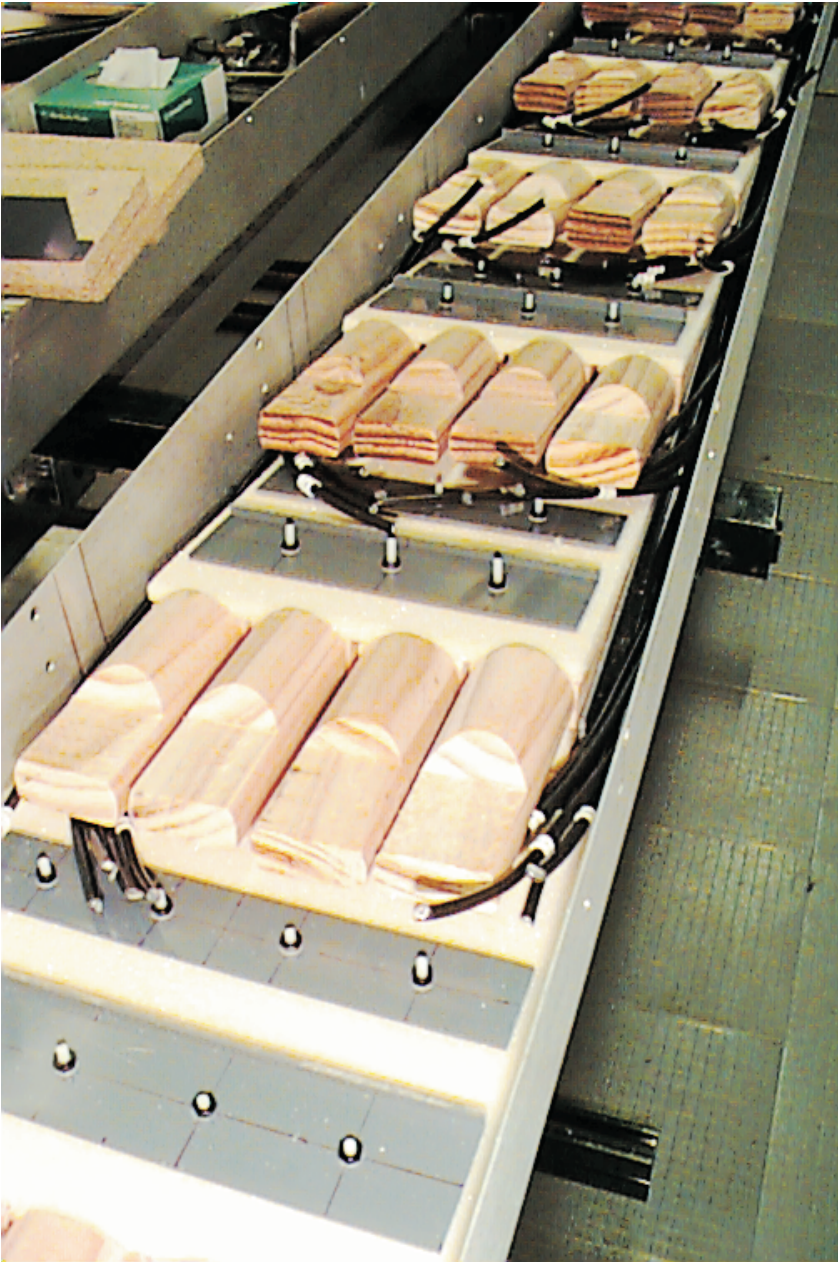
*STAR Collaboration Mtg
August 1-6, 2000, BNL*



A Brief History of Time (of Flight Patch)

- 8/3/99 Last TOFp Plenary Talk
- 10/5/99 Review II (Bellwied Committee)
- 12/16/99 TOFp Safety Review (Makdisi Committee)
- 12/22/99 DOE Approval to install TOFp, funding earmarked
- 3/5/00 SN416 on pVPD simulations
- 3/6/00 BNL Safety certification of HVSys
- 5/16/00 Review III (Marx Committee), *a.k.a.* “FDR”
- 5/17/00 Interfaces Discussion
- 5/18/00 pVPD Safety Review (Makdisi Committee)
- 5/21/00 STAR FDR Approval, Go for construction start...
- 5/23/00 HVSys Cell Fabrication complete
- 5/31/00 25 R5946 PMTs from CCNU/IHEP arrive at Rice
- 6/6/00 Construction funding in place at Rice, Spending starts...
- 6/30/00 Fifty BC420 Slats at Rice
- 7/17/00 JINR/BNL/Rice M.O.U. for HVSys Cells signed







FEE (Rice version 7)

compact...

dead time $\sim 65\text{ns}$...

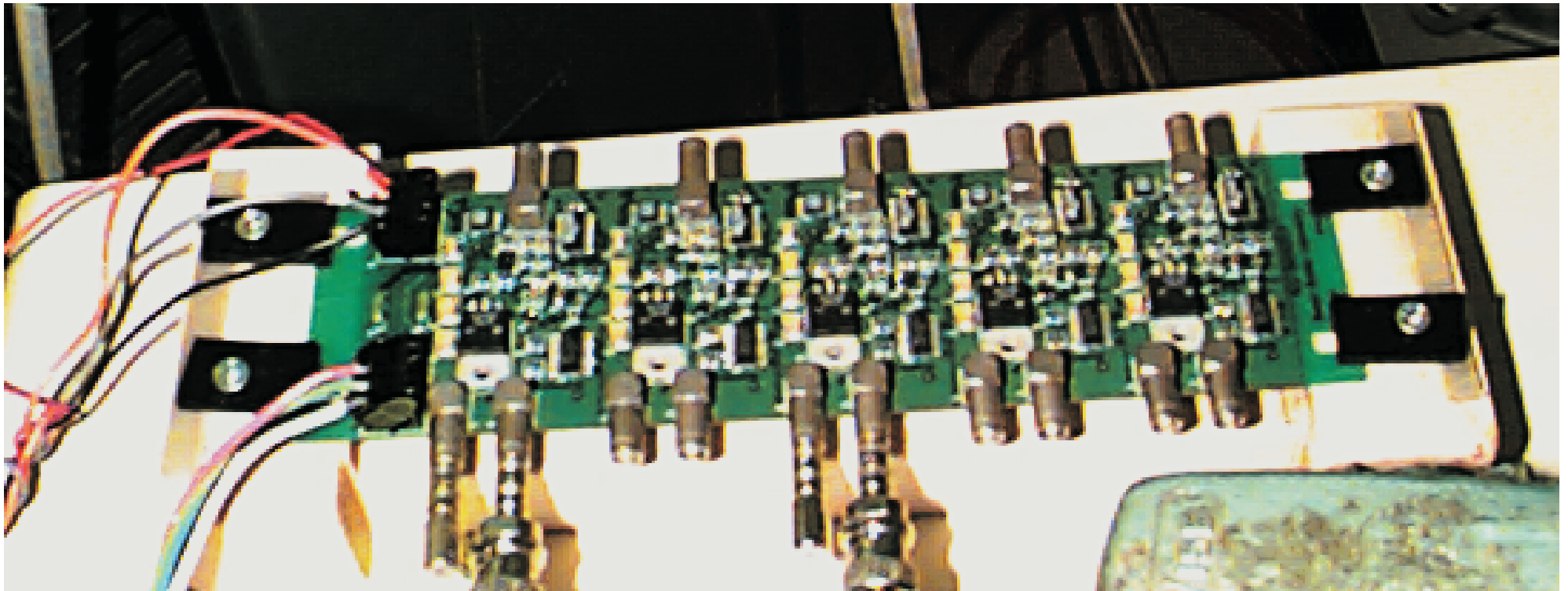
logic rise time $< 0.5\text{ns}$...

resolution $\sim 10\%$ better than best NIM/CAMAC units...

minor timing crosstalk problem solved...

fused, BNL Safety approved...

successful “test stuff” out-of-house, 16 more boards done this week.

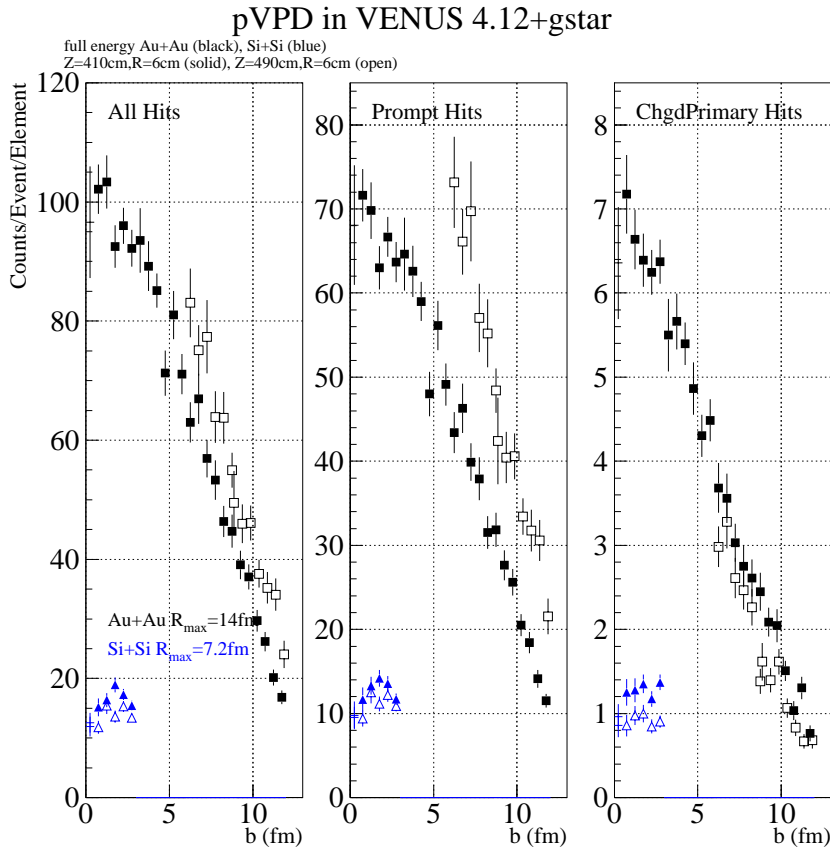


(an excellent front end for MGRPC FEE)

Maxim 370 \rightarrow v.7 LE \rightarrow ADC/TDC \rightarrow R/O

pVPD Progress

SN 416



3 ch/side A.O.K. in all Au+Au
....also works in most Si+Si

Positioning $|Z| \sim 4.5\text{m}$...

similar R2083-based Start
Detectors at the AGS:

$$\sigma = 30 \oplus 70/\sqrt{N_{\text{hits}}}$$

Vertex position (L3)

central Au+Au, $\sigma_z \sim 0.5\text{cm}$

peripheral Au+Au $\sigma_z < 1.5\text{cm}$

ADCs sensitive to centrality...

STAR approved
BNL Safety approved (pending two specific tests)

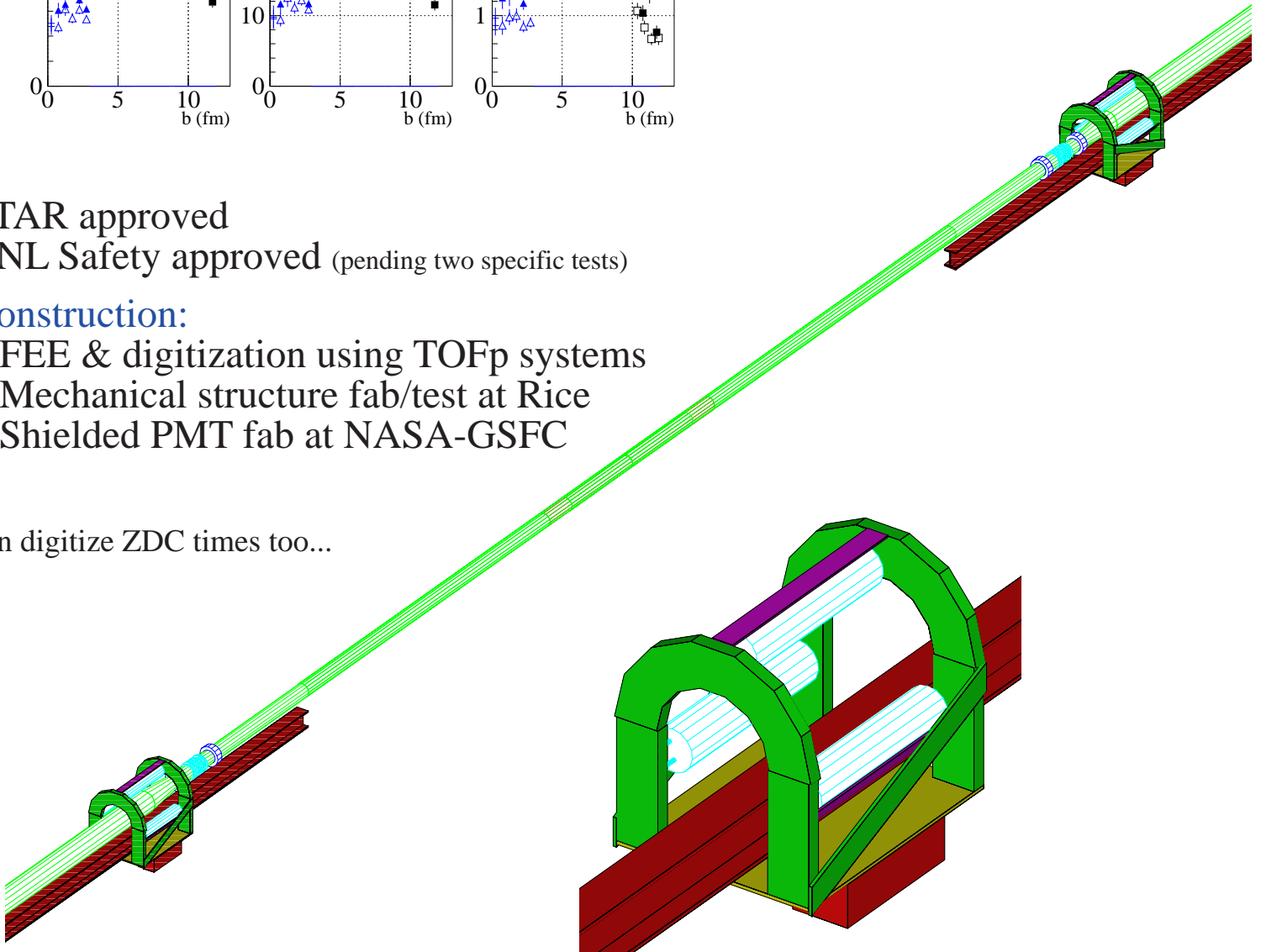
Construction:

FEE & digitization using TOFp systems

Mechanical structure fab/test at Rice

Shielded PMT fab at NASA-GSFC

can digitize ZDC times too...



Software

Rice (F. Geurts)

TOFp and pVPD gstar descriptions in good shape

interaction with PMD group

proposed beam support modification...

see if pVPD at $|Z| = 4-5\text{m}$ affects PMD observables...

presently refurbishing detector response code (cts)

geometry, slat angles (R of extrapolation cylinder depends on Z)

bench results for slat response, effects of cable attenuation, TDC resn, etc.

KSU (W.-M. Zhang)

new St_ctf_Maker

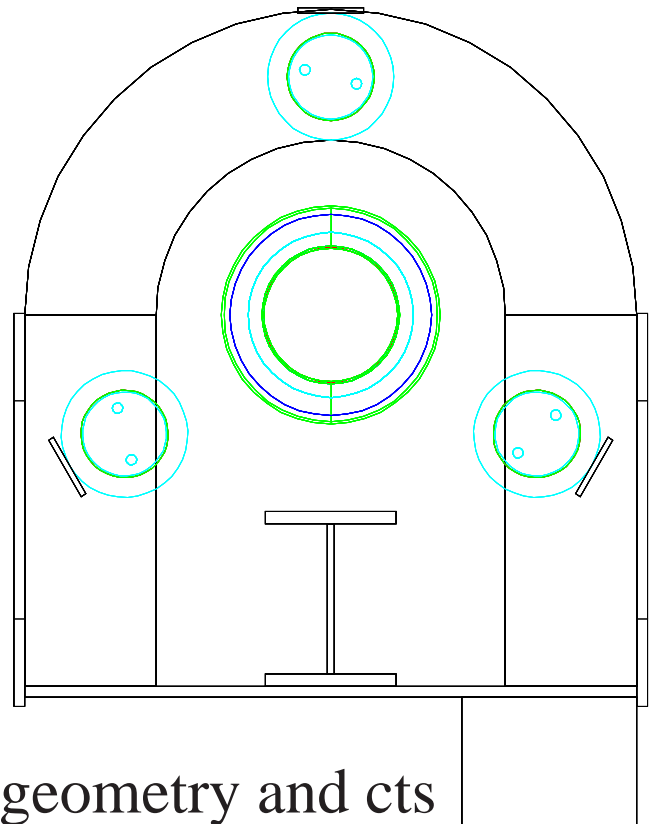
read TPC tracks

get primary vertex

extrapolate to PV

extrapolate to a cylinder

w/ std library routines...



paused in August, needs updated geometry and cts
otherwise nearly ready for inertion into bfc.C...



In Hand:

- ~4 miles of TOFp/pVPD cable inc thermocouple wire, all connectors
- all slats, 25 PMTs w/ special timing spec's
- all tray mechanical pieces
- all platform electronics

In Progress:

- HVSys cell ship
- rest of PMTs
- FEE Stuff/test
- cable assembly
- pVPD0 structure, load test
- electronics test/grade

DAQ interface making good progress, first long-term visitors arriving here for TOFp DAQ development later this month...

Schedule

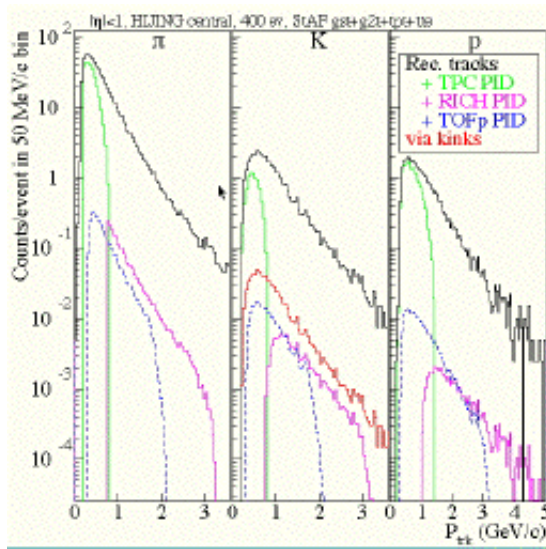
September, 2000	major assembly
October, 2000	tweaking and system testing
November 1, 2000	3 detectors, cabling, & electronics arrive at BNL

Installation fairly light - Try to stay out of the way of EMC, SVT, and FTPC!
new cable trays, new rack, water and interlock systems, detectors

ready for action March 1st, 2001...



STAR TIME-OF-FLIGHT



We proposed the construction of a single tray of highly segmented Time-of-Flight detectors and the installation of this tray in STAR in time for operation in the first physics run of RHIC. The system covers approximately one unit of pseudo-rapidity and ~ 5.3 degrees in azimuth with 41 single-ended plastic scintillator slats. At the heart of the system are custom high-performance leading-edge discriminators with remote threshold control inside the tray. When in STAR, the system will provide velocity information for reconstructed tracks that extends, and nearly completes, the hadronic particle identification capabilities of STAR. High efficiency direct identification of pi and K mesons is possible up to ~ 1.8 GeV/c, while protons can be positively identified with high efficiency at momenta up to ~ 3 GeV/c. The system thus plays a positive role in a number of fundamental "spectra" physics analyses in STAR. It also allows important consistency tests of the performance of each of the various particle identification approaches available in STAR.

Documents

- 11/18/98 [TOFp Proposal](#)
- 02/04/99 [TOFp Plenary Talk I](#)
- 06/17/99 [SysTest-I Proposal](#)
- 08/03/99 [TOFp Plenary Talk II](#)
- 10/05/99 [TOFp Implementation](#)
- 10/05/99 [TOFp Requirements](#)
- 10/05/99 [TOFp Review II Talk](#)
- 12/09/99 [TOFp Technical](#)
- 12/16/99 [TOFp Safety Review](#)
- 12/16/99 [HVSys Info](#)
- 03/06/00 [HVSys Compliance](#)
- 05/11/00 [Test Procedures](#)
- 05/18/00 [STAR-TRG Interface](#)

- 02/25/00 [pVPD Simulations \(SN0416\)](#)
- 05/08/00 [pVPD CADD](#)
- 05/15/00 [pVPD Technical](#)
- 05/17/00 [pVPD Safety Review](#)

Download Areas

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Contacts

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