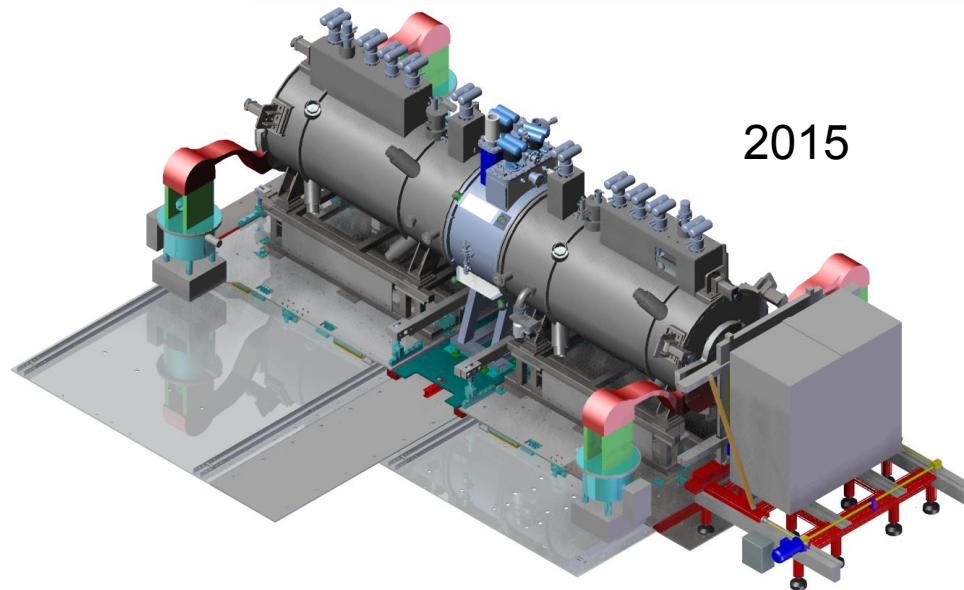


MICE Summary



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Outline



- Some MICE parallel session highlights
 - with apologies to those whose slides I left out!
- Conclusions

Parallel Session Presentations



- Presentations:
 - MICE Construction:
 - Virostek, Tartaglia, Witte, Prestemon
 - MICE Experiment:
 - Blackmore, Rajaram, Cremaldi, Drews/Winter, Leonova, Adey, Hanlet, Long

Spectrometer Solenoids (Virostek)

- Empty high-bay at Wang NMR!



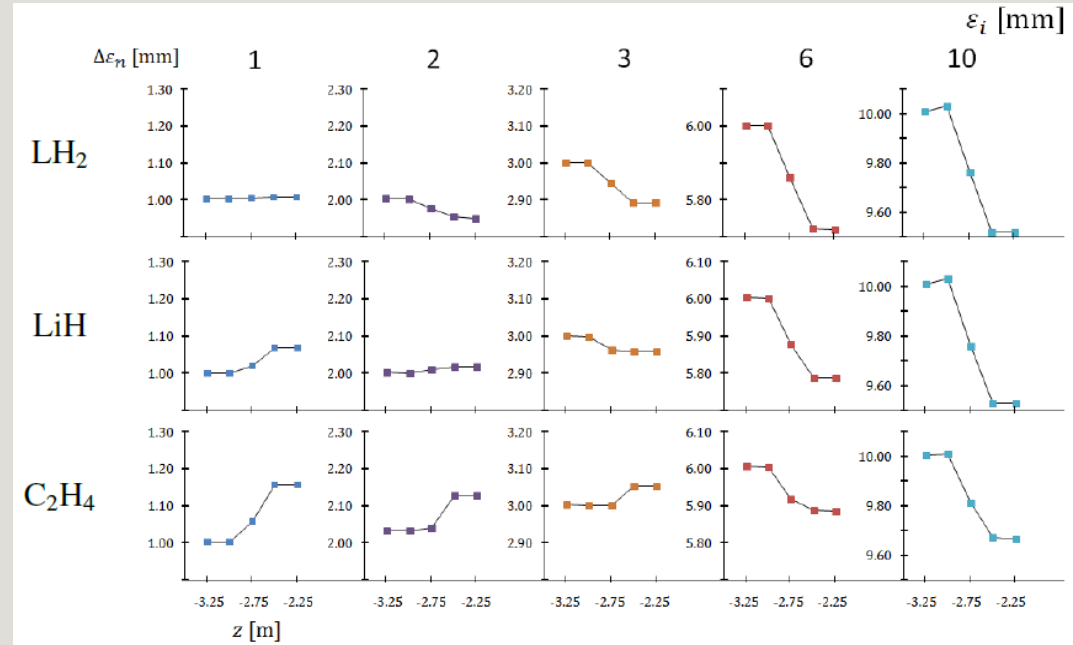
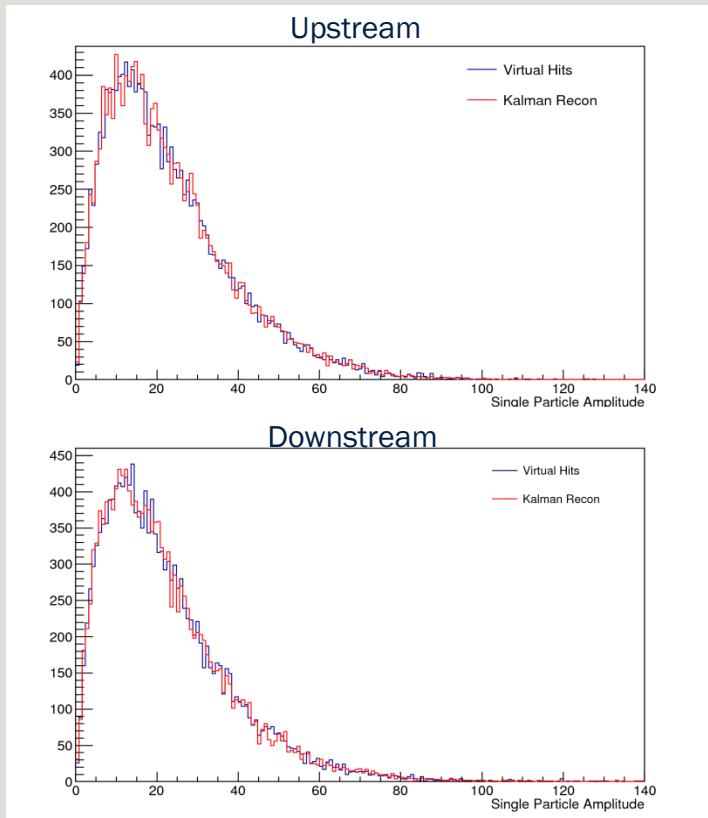
- Remaining tasks:

- Upgrade SSU HTS lead connections & thermal intercepts
- Vacuum tests / repairs as needed
- Temperature sensor tests / repairs as needed
- Install downstream tracker & move SSD to MICE hall

to be done by LBL techs
@ RAL early FY15

Step IV Physics (Blackmore)

Summary



- A lot can be learned from Step IV
- Exactly how much depends on installation of Step V \rightarrow reacceleration is the ultimate demonstration of ionisation cooling!

CONCLUSIONS

- MAUS can reconstruct data from every Step IV detector
- Capable of simulating the TOF, KL, and Tracker
 - EMR and Ckov in development
- The big gap is global track reconstruction
 - New manager, two students ramping up
- CAD-geometry implementation has progressed
 - Ongoing validation against full simulation
 - Usability and optimization issues to be evaluated
- Need to focus and make sure we have working simulation and reconstruction (beam + geometry + detectors + global) ready for Step IV

PID, Cherenkov (Cremaldi/Drews/Winter)



Stability Study: Positron Peaks



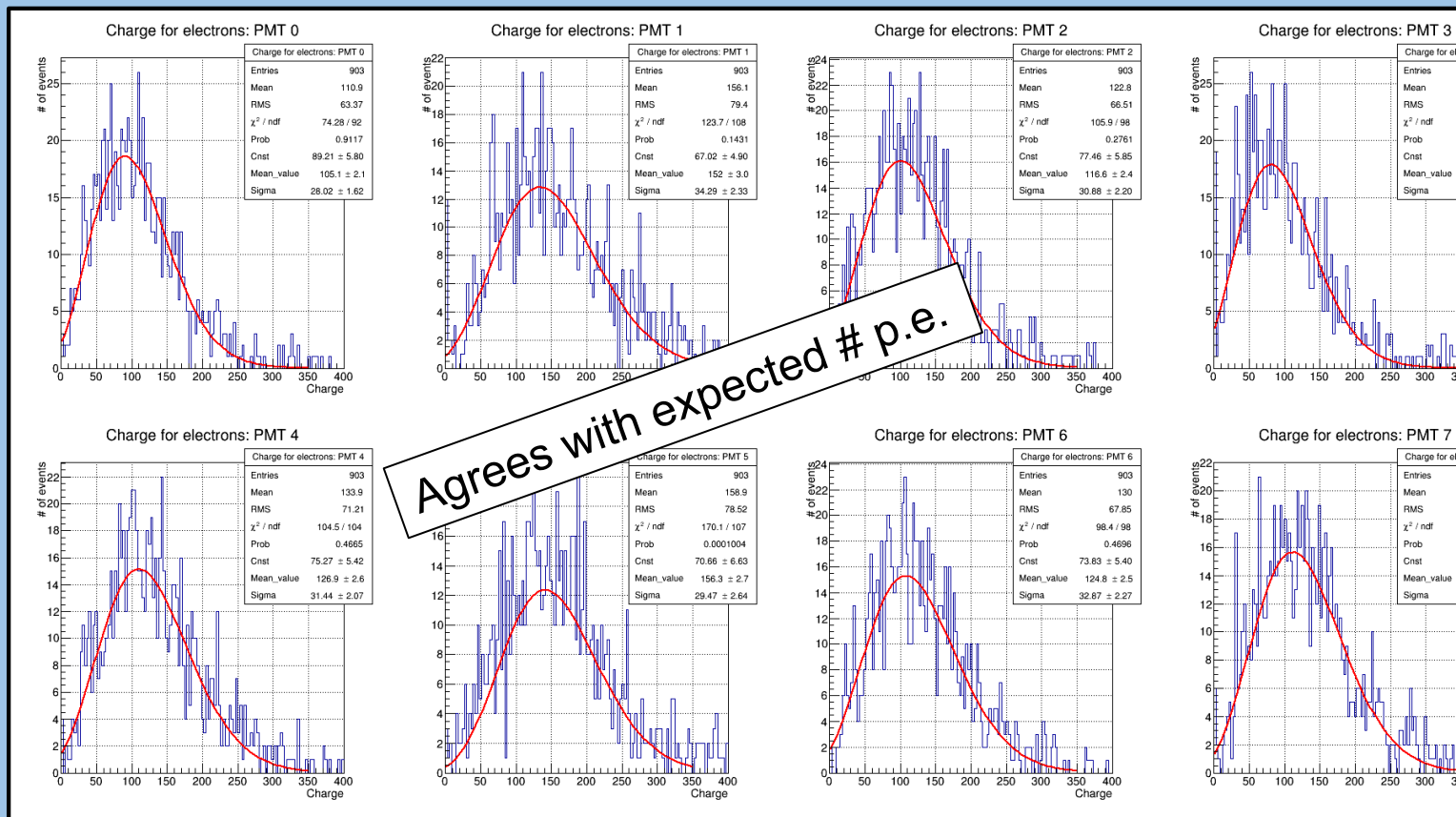
ins 02641-02691

: 238 MeV/c

: 81.92 MeV/c

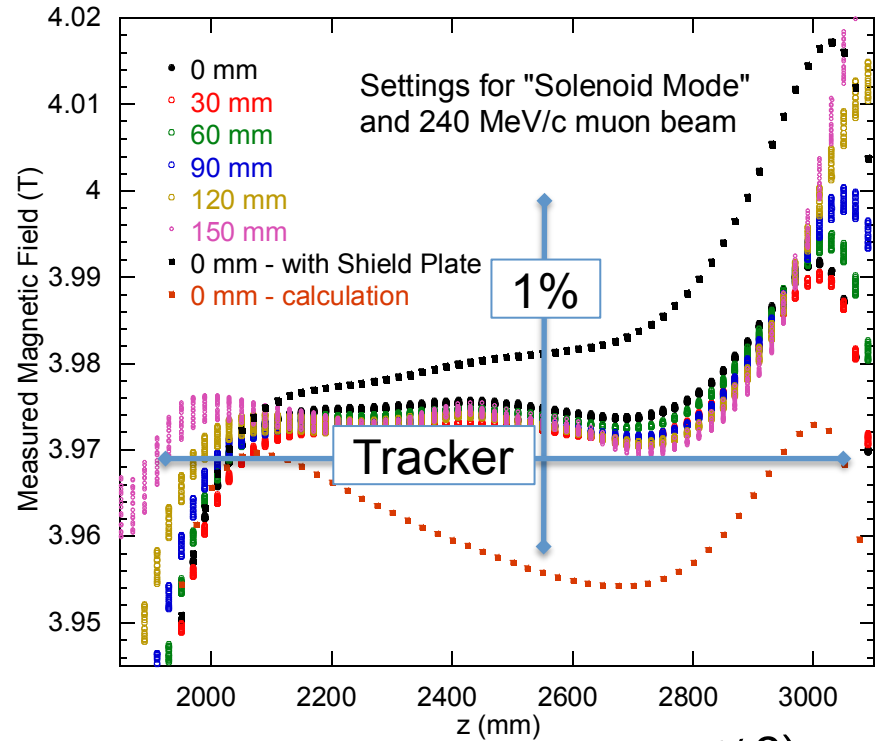
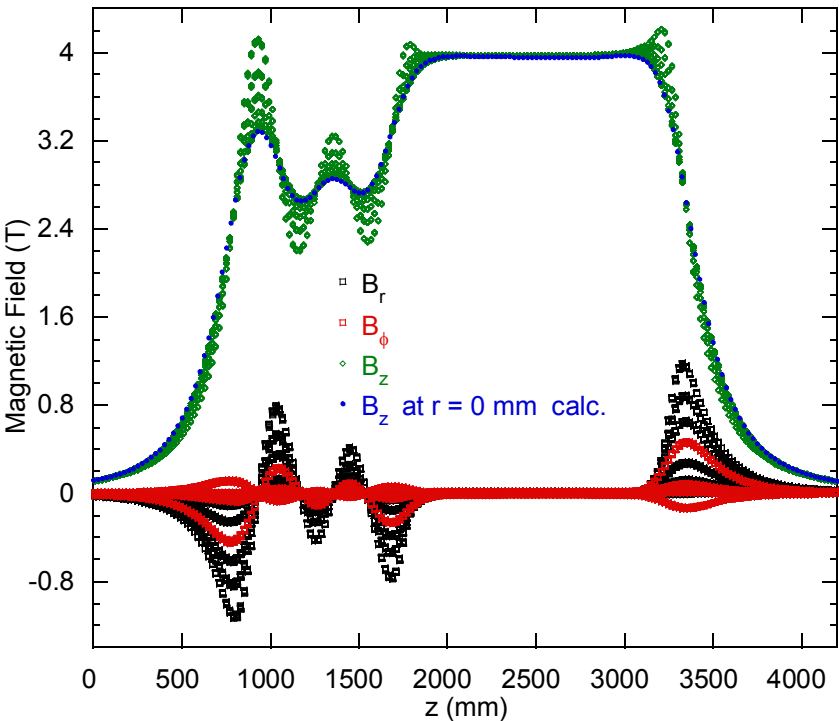
03/2012

Mean	Uncertainty
105.1	2.1
152.0	3.0
116.6	2.4
96.4	2.2
126.9	2.6
156.3	2.7
124.8	2.5
127.9	2.5



SS Mapping (Leonova)

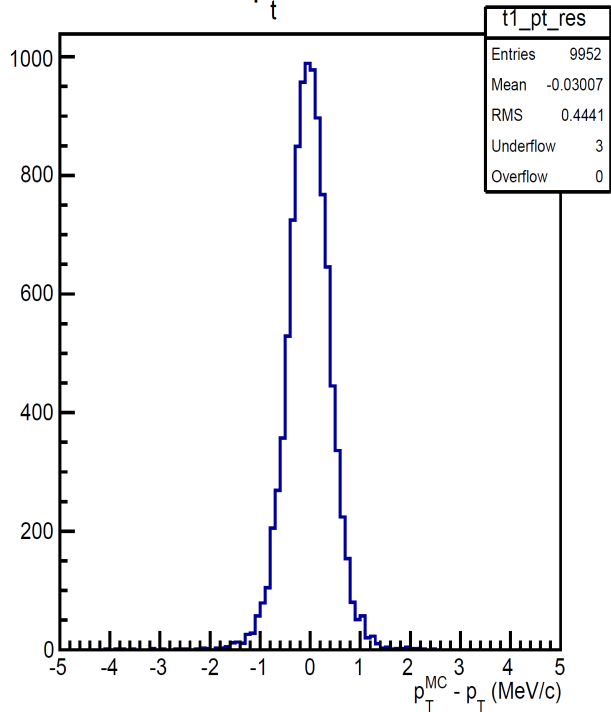
SSU Field Measurements



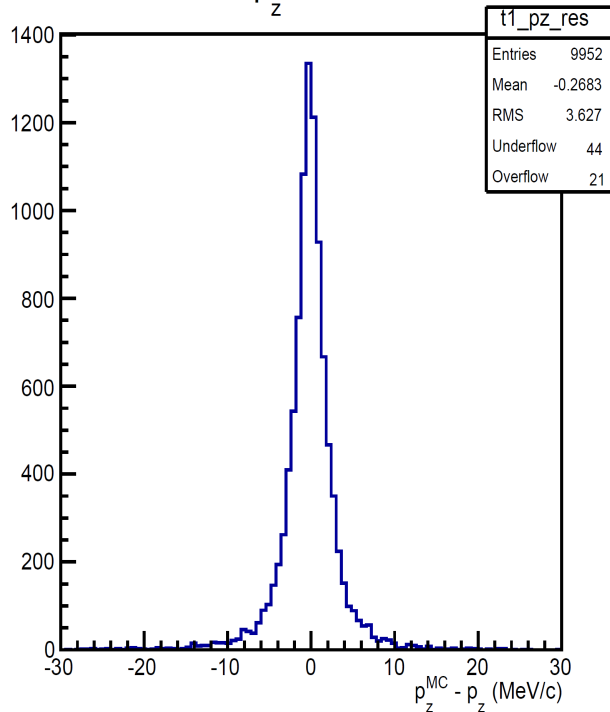
Field *not* uniform to 1% over tracker volume? (Or did we mean $\pm 1\%$?)
 Field disagrees with calculation based on "as-built" geometry
 How should currents be set for greater uniformity?
 Puzzles to work through...

Tracker HW & SW (Adey)

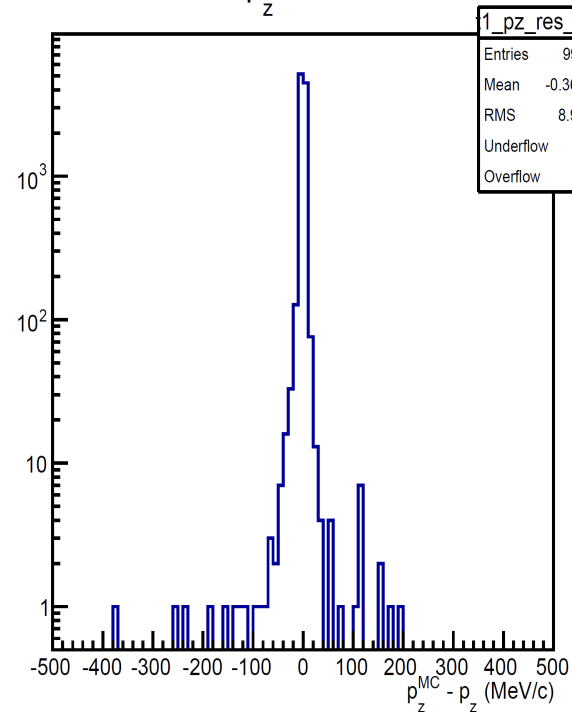
T1 p_t Residual



T1 p_z Residual



T1 p_z Residual

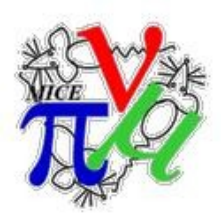


MAUS Tracker reconstruction working well!

T1 p_z res vs. p_t

T2 p_z res vs. p_t



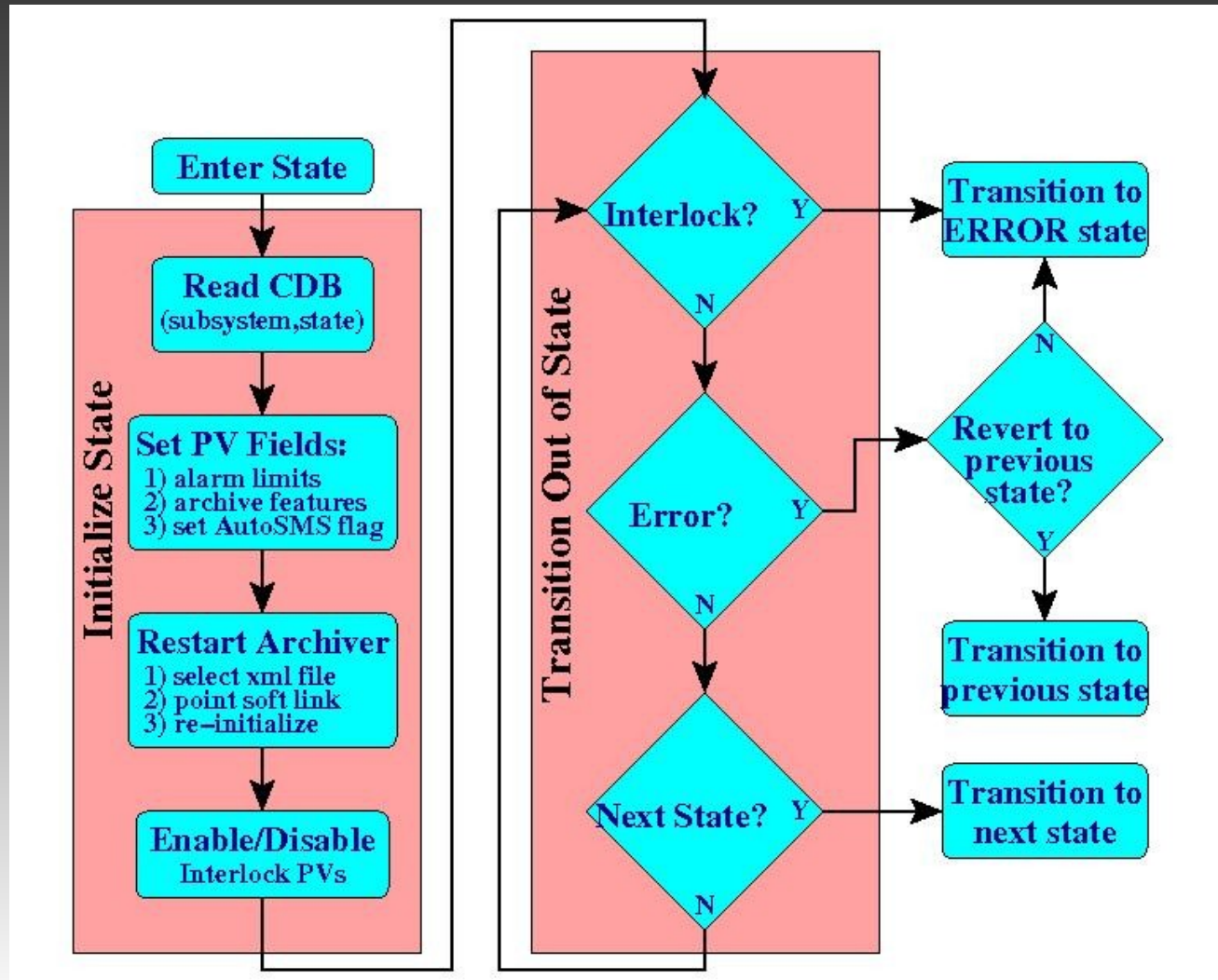


State Machine Algorithm

For each subsystem & state, the algorithm:

Transitions:
• manual
• automatic

Note: states can be static or dynamic



Operations Planning (Long)

- Several complex tasks to orchestrate...

- **Ops Coordinator (Steve Boyd):**
 - Needs to schedule work in concert with construction team;
- Information gathering exercise the first step
 - Need to support this!
- Commissioning windows:
 - Will identify them as early as possible;
 - Do as much as possible *WITHOUT BEAM*
- Discussion!

Two Concerns

1. Wedge test at risk

- Available funds for LiH wedge insufficient, new funds may be unavailable
- But wedge test very valuable
 - Not only demonstrates emittance exchange experimentally
 - Also potentially solves systematics problem in measuring dE/dx and straggling
- Need to simulate plastic wedge
 - If it works in simulation, should be cheap and quick to fabricate

2. Where & when test full-gradient cavities in realistic B field?

- 16 MV/m requires 4 MW into a cavity, or 2 MW and LN₂ cooling
 - Do it once Step V beam program done?

Short Movie (Long)



Conclusions

- MICE is progressing well towards early-2015 start of Step IV data-taking!
 - and Step V in 2018
 - But still *much* to do...
 - ...and more hands needed!
- Discussions started with DOE on continuing support for MICE activity through Step V
- Hope to hear good news from NSF next month