

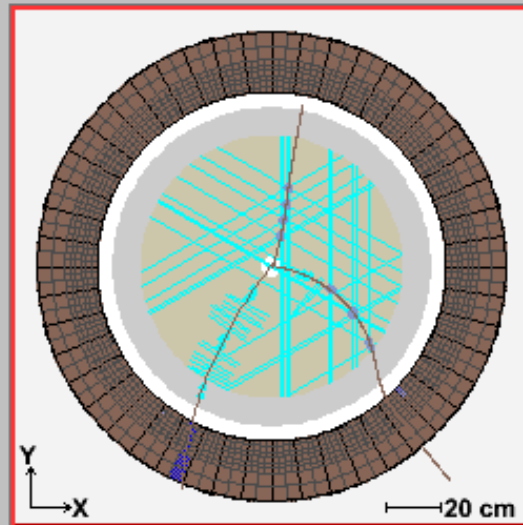
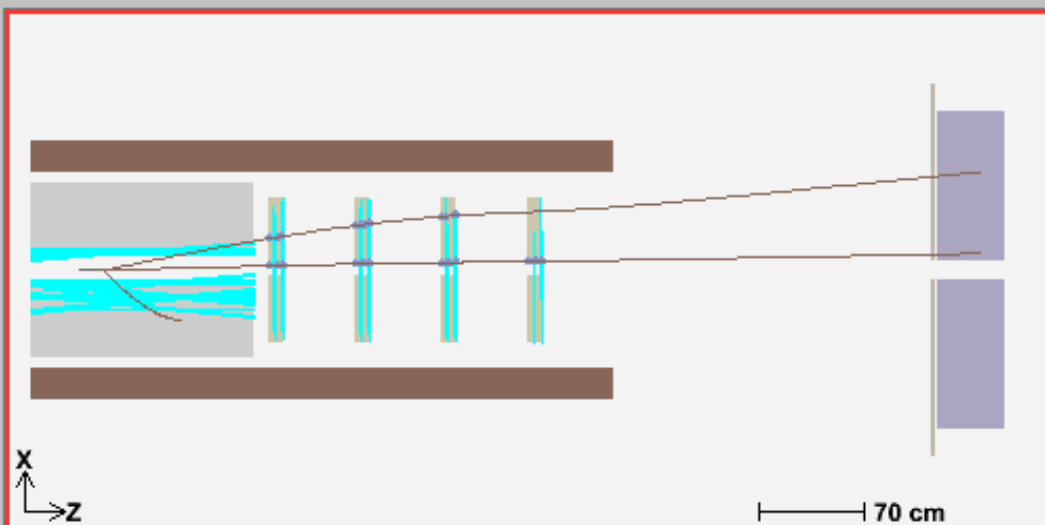
Reorganization of Tracking Code

Simon Taylor/JLAB

- Two passes: Wire-based and Time-based
 - **DTrackWireBased**: fit using wire positions, no time information
 - Loop over mass hypotheses, keep all successful fit results
 - **DTrackTimeBased**: fit using drift times for each wire-based track
 - Compute a figure-of-merit for quality of mass hypothesis (from wire-based stage)
 - χ^2 of fit
 - dEdx in chambers
 - Time-of-flight to outer detectors (BCAL and TOF)
- New high-level object: **DChargedTrack** in PID library
 - List of fitted time-based tracks for each track candidate, ordered by FOM
- **DParticle** intended to include results from **DChargedTrack** and **DPhoton**

Changes to Event Viewer

- Choosing DTrackWireBased (DTrackTimeBased) displays results of all successful fits
 - ▶ *There will be multiple wire-based entries for each track candidate*



Track Draw Options

- DTrackCandidate: <default>
- DTrackWireBased: Kalman
- DTrackTimeBased: Kalman
- DChargedTrack: Kalman
- DMCThrown
- DMCTrajectoryPoint

Hit Draw Options

- CDC
- CDC Drift Time
- CDCTruth
- FDC Wire

Track Info

Thrown

trk:	type:	p:	theta:	phi:	z:
1	pi-	1.405	11.98	6.159	66.31
2	pi+	7.151	6.014	1.225	66.31
3	proton	1.003	59.2	4.03	66.31
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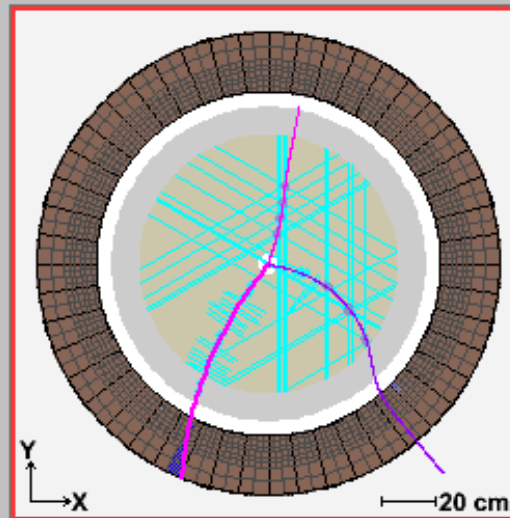
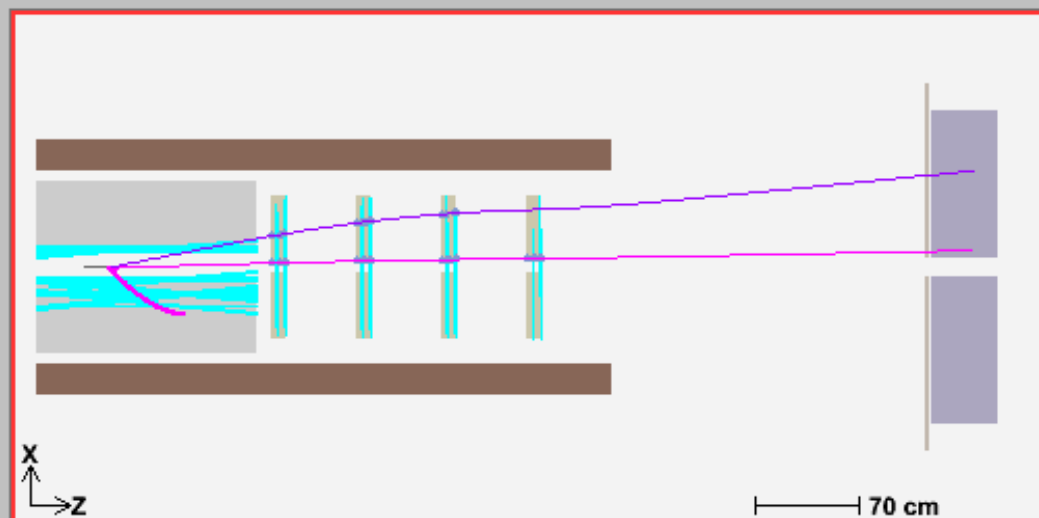
Reconstructed

trk:	type:	p:	theta:	phi:	z:	chisq/Ndof:	Ndof:	FOM:
1	pi-	1.483	11.87	6.129	65.08	1.121	28	N/A
2	pi+	9.258	5.98	1.273	69.02	0.6864	33	N/A
3	proton+	9.257	5.98	1.273	69.02	0.6864	33	N/A
4	pi+	1.054	60.32	4.037	66.35	1.103	20	N/A
5	proton+	1.055	60.32	4.037	66.35	1.103	20	N/A
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FOM: DTrackWireBased:Kalman

Changes to Event Viewer

- Selecting DChargedTrack displays the fitted track with the highest FOM



Track Draw Options

- DTrackCandidate: <default>
- DTrackWireBased: Kalman
- DTrackTimeBased: Kalman
- DChargedTrack: Kalman
- DMCThrown
- DMCTrajectoryPoint

Hit Draw Options

- CDC
- CDC Drift Time
- CDCTruth
- FDC Wire

Track Info

Thrown

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Reconstructed

trk:	type:	p:	theta:	phi:	z:	chisq/Ndof:	Ndof:	FOM:
1	pi-	1.4	11.98	6.17	66.94	2.575	28	9.17935e-06
2	pi+	7.081	6.004	1.226	69.86	5.242	33	6.63025e-21
3	proton+	0.9878	59.55	4.026	66.27	0.972	20	0.23534
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DChargedTrack:Kalman