Subject: Running the Kalman on the Mvd
Posted by Ralf Kliemt on Thu, 24 Apr 2008 09:54:20 GMT
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Hi all,

I started to try out genfit on MvdHits. After some issues concerning the Mvd package itself I ran into some fitting problems which don't tell me much. Here we go:

I checked in the stuff into rev. 2589 (and 2588).
I run the macros in macro/mvd/Tracking
The simulation does 1GeV protons with Mvd & Field
The digi & hitreco runs
MC Trackfinding runs

Anyway somehow the Kalman cannot fit the tracks I make. Here you have some detailed output (I uncommented the info output in the Kalman class).

Hopefully someone can help...

Ralf.

Toggle Spoiler
PndMvdKalmanTask::Exec
-I- PndMvdKalmanTask: contains 1 Tracks.
Detailed Debug info on the tracks:
TrackCand no. 0 has 6 hits.
[ihit | detid | index]
[0 | 3 | 0]
[1 | 3 | 1]
[2 | 3 | 2]
[3 | 4 | 0]
[4 | 4 | 1]
[5 | 4 | 2]
starting track0
-I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
Mvd hit in detector 1_1/34_0/119_1/118_2/98_14/92_1/90_1/89_1/ at (1.60909, 0.271733, 1.94354) cm with 46929.8 e, Cluster No. 0

o: 2.11 0.656733 1.94354
u: 0 1 0
v: -1 0 0
-I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
Mvd hit in detector 1_1/34_0/102_1/101_3/98_1/92_1/90_1/89_1/ at (4.16446, 0.653887, 5.0215) cm with 92495.9 e, Cluster No. 1

o: 4.08241 1.43459 4.5
u: -0.104528 0.994522 0
v: 0 0 1
-I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
Mvd hit in detector 1_1/34_0/66_2/65_12/59_1/57_1/56_1/ at (4.9599, 0.758694, 5.975) cm

with 32364.3 e, Cluster No. 2

o: 4.10249 -1.00282 5.975
u: 0.707107 0.707107 0
v: -0.707107 0.707107 0
 -I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
Mvd hit in detector 1_1/34_0/80_1/78_1/77_4/75_29/72_1/71_1/ at (7.89362, 1.08679, 9.48283) cm with 122466 e, Cluster No. 0

o: 7.67364 1.9824 10.65
u: 0 0 1
v: 0.238533 -0.971134 0
 -I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
Mvd hit in detector 1_1/34_0/80_1/79_1/77_9/75_29/72_1/71_1/ at (7.44033, 1.04598, 8.9416) cm with 66616.9 e, Cluster No. 2

o: 7.4256 -0.00891832 10.65
u: 0 0 1
v: -0.0139622 -0.999903 0
 -I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
Mvd hit in detector 1_1/34_0/86_1/83_1/82_5/81_1/72_2/71_1/ at (12.4543, 1.43929, 14.9139) cm with 65711.7 e, Cluster No. 4

o: 12.3431 2.06957 16.7752
u: 0 0 1
v: 0.173648 -0.984808 0
6 hits in track 0
starting fit
Kalman::processTrack::Starting track

3x1 matrix is as follows

| 0 |
---
0 | 1.609
1 | 0.2717
2 | 1.944

Process hit #0 of rep #0
.DetPlane: O(2.11,0.656733,1.94354) u(0,1,0) v(-1,0,0)
++++++++++++++ do prediction: ++++++++++++++++
s before extrapolation: 0
s_to: 1.94354
unew[2]=z=1.94354s after extrapolation: 0
s before extrapolation: 0
s_to: 1.94354
unew[2]=z=1.94354s after extrapolation: 0
s before extrapolation: 0
s_to: 1.94354
unew[2]=z=1.94354s after extrapolation: 0
s before extrapolation: 0
s_to: 1.94354

unew[2]=z=1.94354s after extrapolation: 0
s before extrapolation: 0
s_to: 1.94354
unew[2]=z=1.94354s after extrapolation: 0
s before extrapolation: 0
s_to: 1.94354
unew[2]=z=1.94354s after extrapolation: 0

5x1 matrix is as follows

```
   |     0   |
------------------
  0 |         0
  1 |         0
  2 |         0
  3 |         0
  4 |         0
```

5x5 matrix is as follows

```
   |     0   |     1   |     2   |     3   |     4   |
-------------------------------------------------------------------
  0 |         0         0         0         0         0
  1 |         0         0         0         0         0
  2 |         0         0         0         0         0
  3 |         0         0         0         0         0
  4 |         0         0         0         0         0
```

++
Error in <TDecompLU::DecomposeLUCrout>: matrix is singular
Error in <TDecompLU::InvertLU>: matrix is singular, 0 diag elements < tolerance of 2.2204e-16
FitterException thrown with whatString:
cannot invert covsum in Kalman Gain - det=0
in line: 265 in file: /home/ralfk/Pandaroot/pandaroot/genfit/Kalman.cxx