Subject: Kalman in lhetrack
Posted by StefanoSpataro on Fri, 26 Sep 2008 14:50:02 GMT

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Dear all,
now a Kalman Filter is also provided with lhetrack code, so for TPC+MVD and STT+MVD.

Let me show the difference between lhetrack fit for muons at 1GeV and genfit refit.

TPC+MVD:

STT+MVD:

...
...
in practice there are no strong differences.

You can find some macros on how to run it, after the standard sim/digi/recom in tutorials/lhetrack:

 * run_kalman_tpc.C
 * run_kalman_stt.C
 * plot_kalman_tpc.C
 * plot_kalman_stt.C

At the moment, in the code you can see that three iterations are performed and even smoothing:
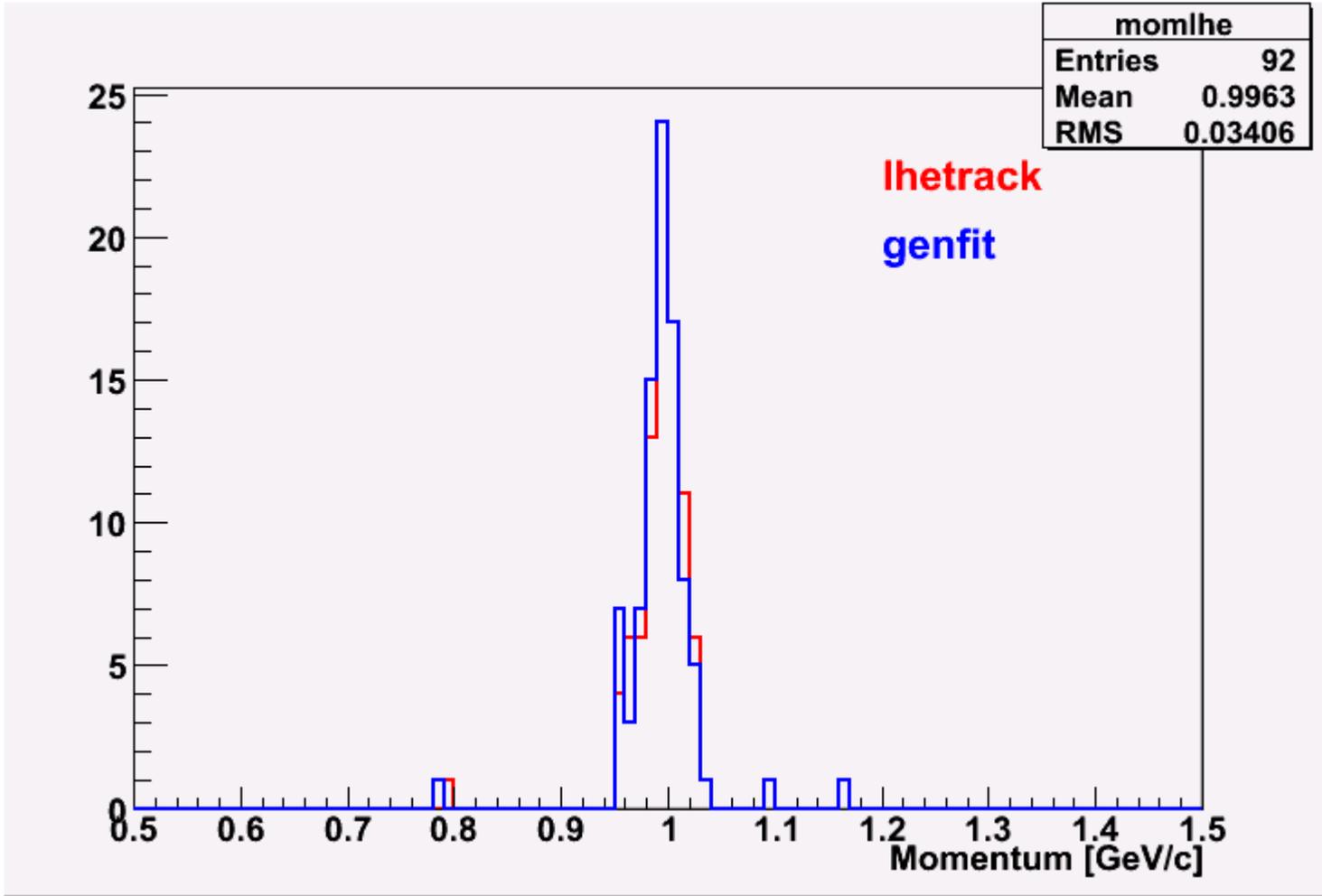
Toggle Spoiler
```
PndLheKalmanTask* lheKalman = new PndLheKalmanTask();
  lheKalman->SetVerbose(iVerbose);
  lheKalman->SetGeane(kTRUE);
  lheKalman->SetSmooth(kTRUE);
  lheKalman->SetNumIterations(3);
  fRun->AddTask(lheKalman);
```

You can switch ON/OFF or play with these parameters.

Probably fixes will be needed, but at least it seems to work.

File Attachments
1) kalman_tpc.gif, downloaded 1386 times

2) kalman_stt.gif, downloaded 1380 times

The figure shows a histogram labeled "momlhe" with Entries 101, Mean 0.9811, RMS 0.06078. It compares **lhetrack** (red) and **genfit** (blue) distributions. The x-axis is labeled "Momentum [GeV/c]" ranging from 0.5 to 1.5, and the y-axis ranges from 0 to 25.