Subject: Re: Tracking: Kalman Task with STT,(electron hypo)
Posted by Ronald Kunne on Wed, 22 Dec 2010 08:58:48 GMT
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I don't know how relevant this is, as the version I use dates from october, but I did a comparison between Kalman reconstruction using the muon hypothesis for all particles versus Kalman using the correct particle hypothesis. Only the reconstruction of electrons supposing they are electrons gives strange results for the resolution.

- Pandaroot trunk version 9969
- Geant3
- pgun generator with vertex (0,0,0)
- theta = 5-140°, phi = 0-360° momentum = 0.2-5 GeV/c
- one primary track per event, only primary tracks are taken into account in the analyses
- 10,000 events per particle
- MVD+TPC+GEM tracking detectors

- macros:
run_sim_tpccombi_pgun.C
run_sim_tpccombi_evtgen.C
run_digi_tpccombi.C
run_reco_tpccombi.C

Attached pdf file with five plots:
p1: sigma(p)/p = (p_MC-p_reco)/p_MC as a function of p (in GeV/c) for four bins in theta. This is mu reconstucted as mu and sigma(p) is the width if the gaussian fitted to the residues. It has to be noted that dp/p ought to be proportional to p, at least for momenta where multiple scattering is not important, and this is not the case.

p2: sigma(p)/p (e- reconstructed as mu-) Note that for the first angle the points scatter a bit, as there are not many events.

p3: sigma(p)/p (e- reconstructed as e-) These are the reconstructions that come out wrong

p4: sigma(p)/p (pi- reconstructed as mu-)

p5: sigma(p)/p (pi- reconstructed as pi-) The behaviour is comparable in both reconstructions.

File Attachments
1) kalman.pdf, downloaded 441 times