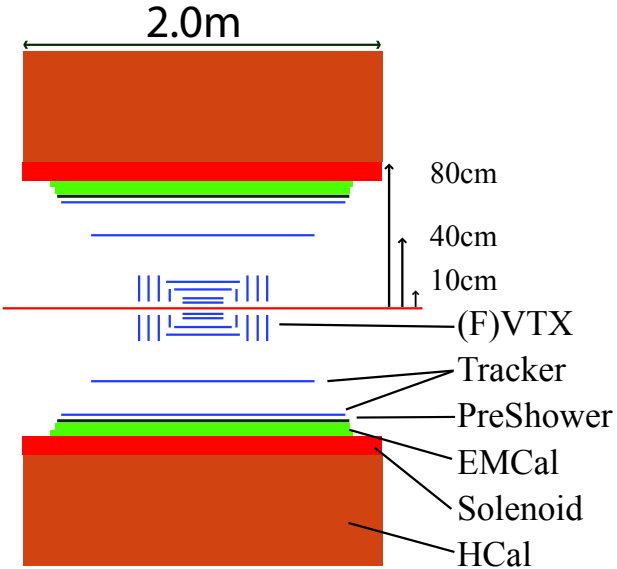
Reminder: What's in the G4 simulation

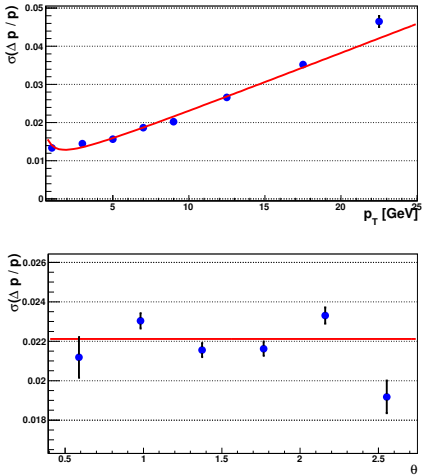
Detector	Technology	Segmentation	R (cm)	N_{chan} ($\times 10^6$)
Inner Tracking	VTX Pixels	50 μm $\times$ 425 μm	2.5	1.5
			5	3
Inner Tracking II	VTX Strip Pixels	80 μm$\times$0.1 cm	10	1.6
			14	2.2
Outer Tracking	New Strips	80 μm$\times$3 cm	40	1
			60	2.2
Compact EMCal PS	Si-W	300 μm$\times$6 cm	61	0.3
Compact EMCal	Si-W E1	0.75 cm$\times$0.75 cm	61–64	0.110
	Si-W E2	1.50 cm$\times$1.50 cm	64–68	0.03
Hadronic Cal	Fe-Sc	0.1η $\times$ 0.1ϕ	80–142	0.0012

rad. length of inner tracker is $\sim$10%

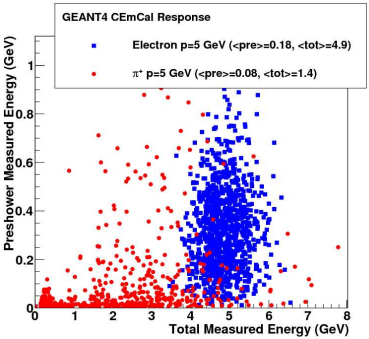
Reminder: What's in the G4 simulation

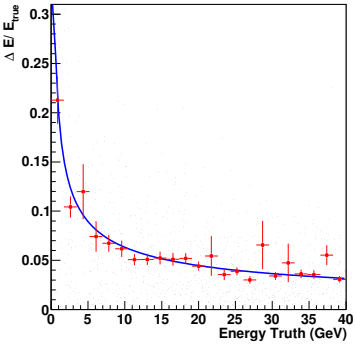


Momentum Resolution



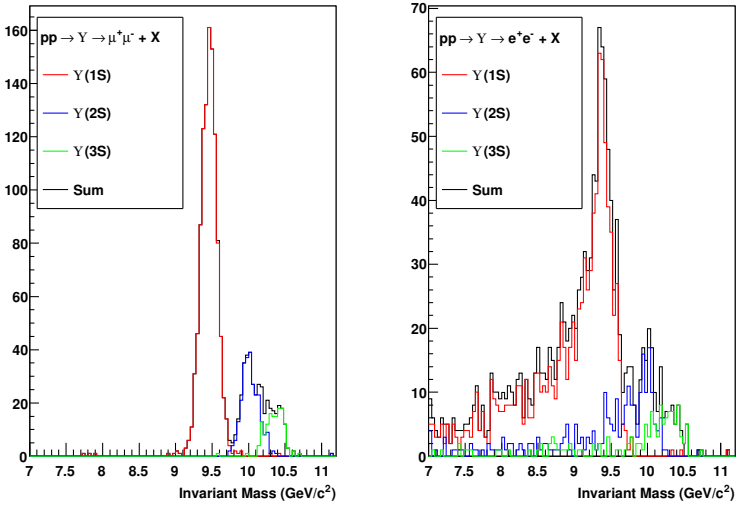
Charged pions, tracked with all 6 silicon layers.





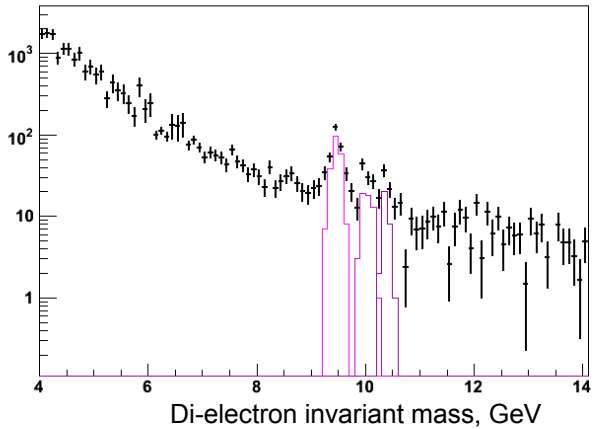
left: electron/pion separation
right: photon energy resolution

Upsilon State Separation



Good enough momentum resolution, but bremsstrahlung make things tricky for electrons.

Signal plus background in 2B most central AuAu events
(or 660B pp events)



A FEW NOTES

Speed problems with the current implementation have prevented detailed simulations of response to heavy-ion collisions.

The geometry is unrealistically simplistic, but for these small studies it shouldn't matter.

Heavy-flavor tagging won't be better than current PHENIX with the same inner tracker

Acceptance of current PHENIX inner tracker is not as good as what is in G4.