

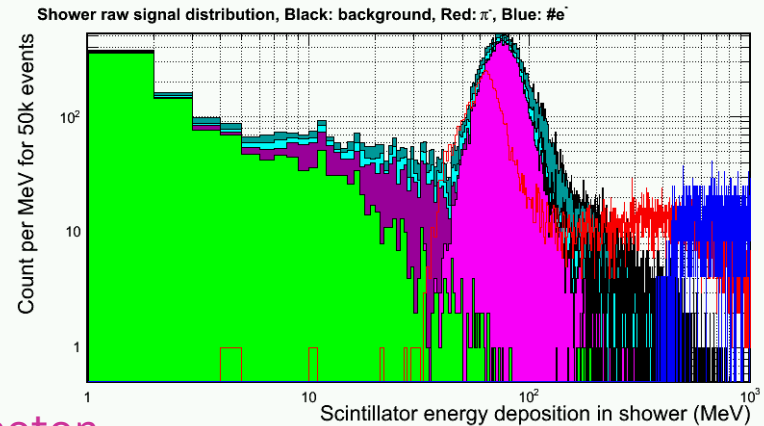
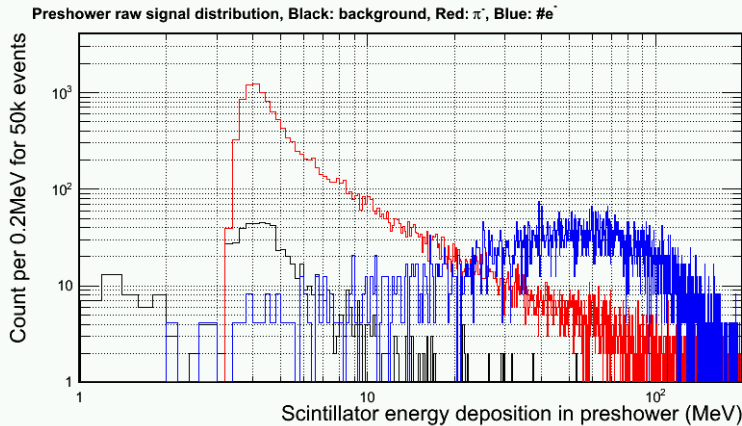
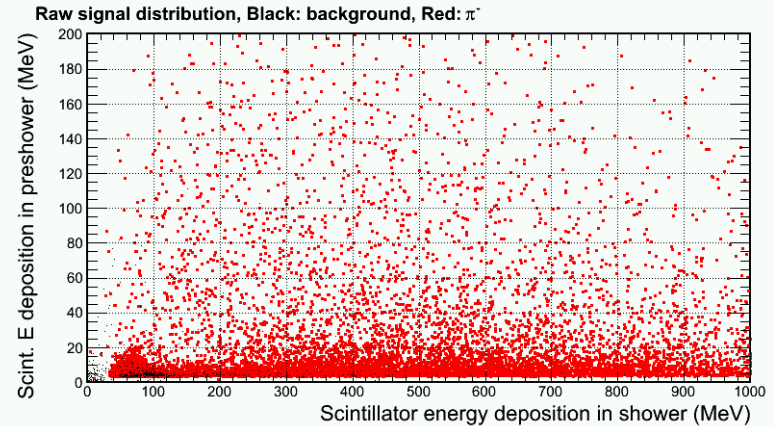
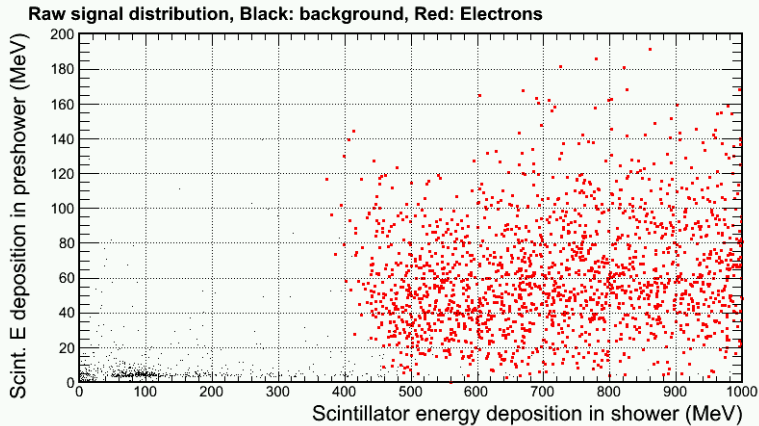


Simulation Updates on PVDIS EC

Jin Huang
Los Alamos National Lab

Zhiwen Updated background contribution for all configurations.

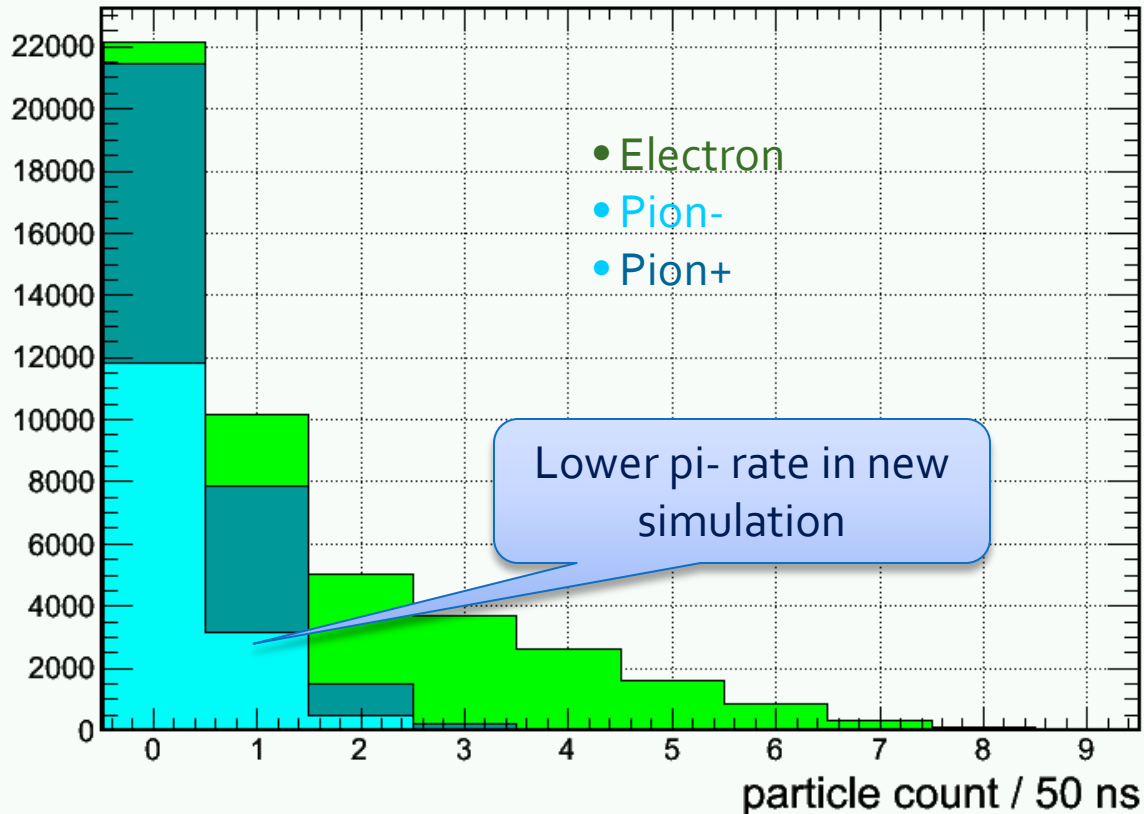
PVDIS shown here:



- Photon
- Electron
- Pion- Pion+

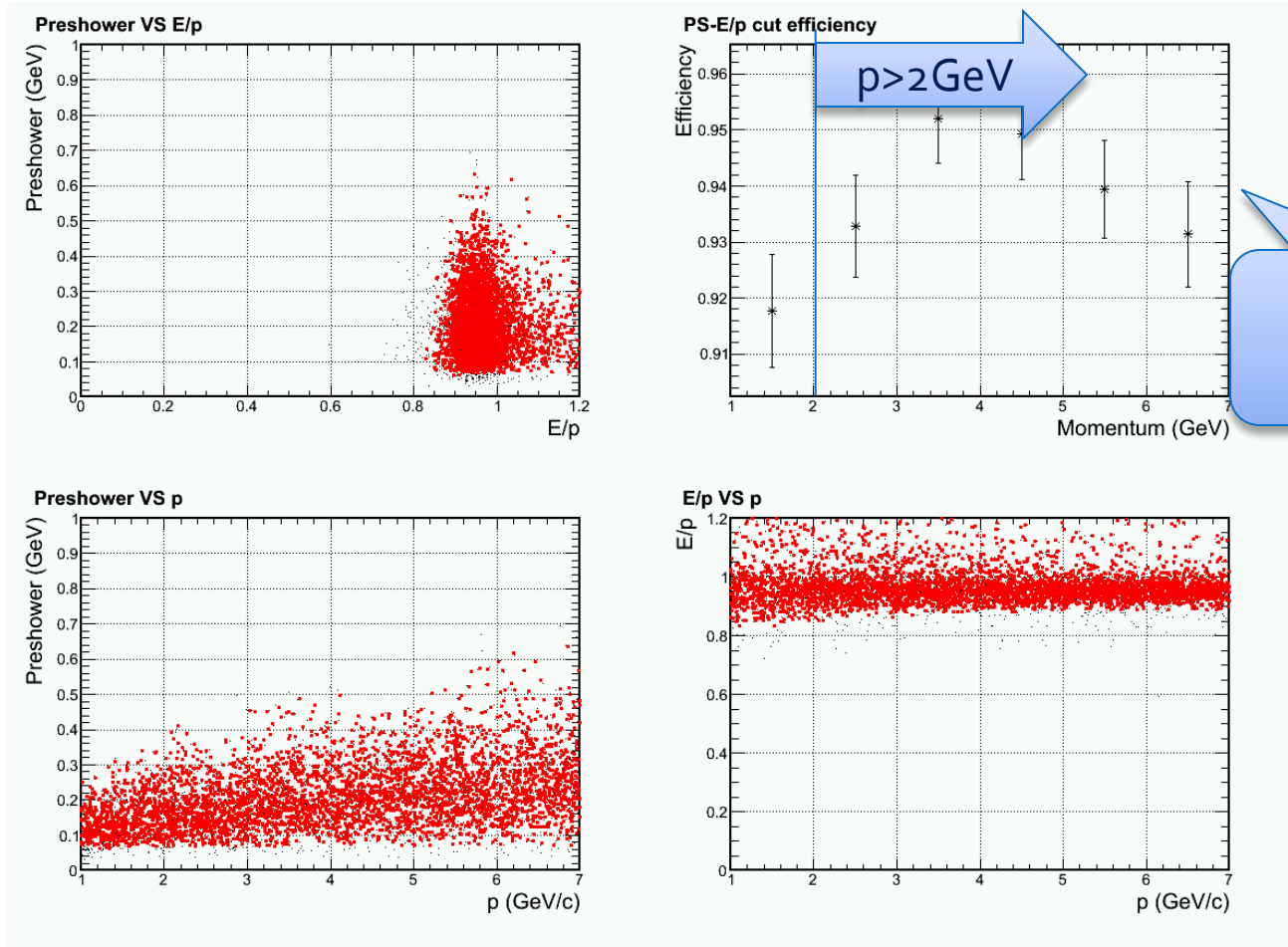
Updated: Per-event pion rate for 1+6 hexagon cluster at inner radius

Background particle per trigger



Updated: electron efficiency

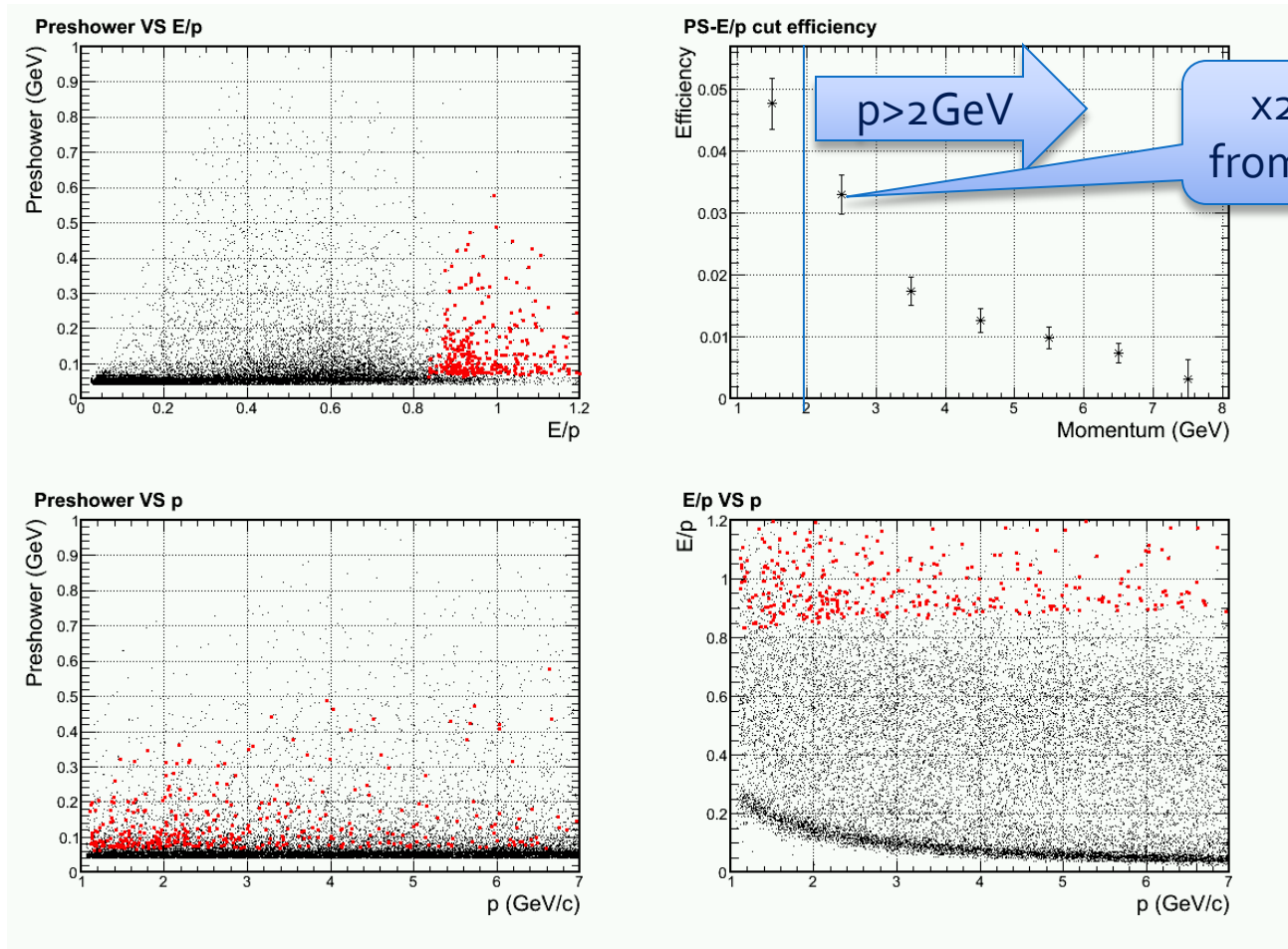
Only electron and pi- background used



Not much change in electron eff.

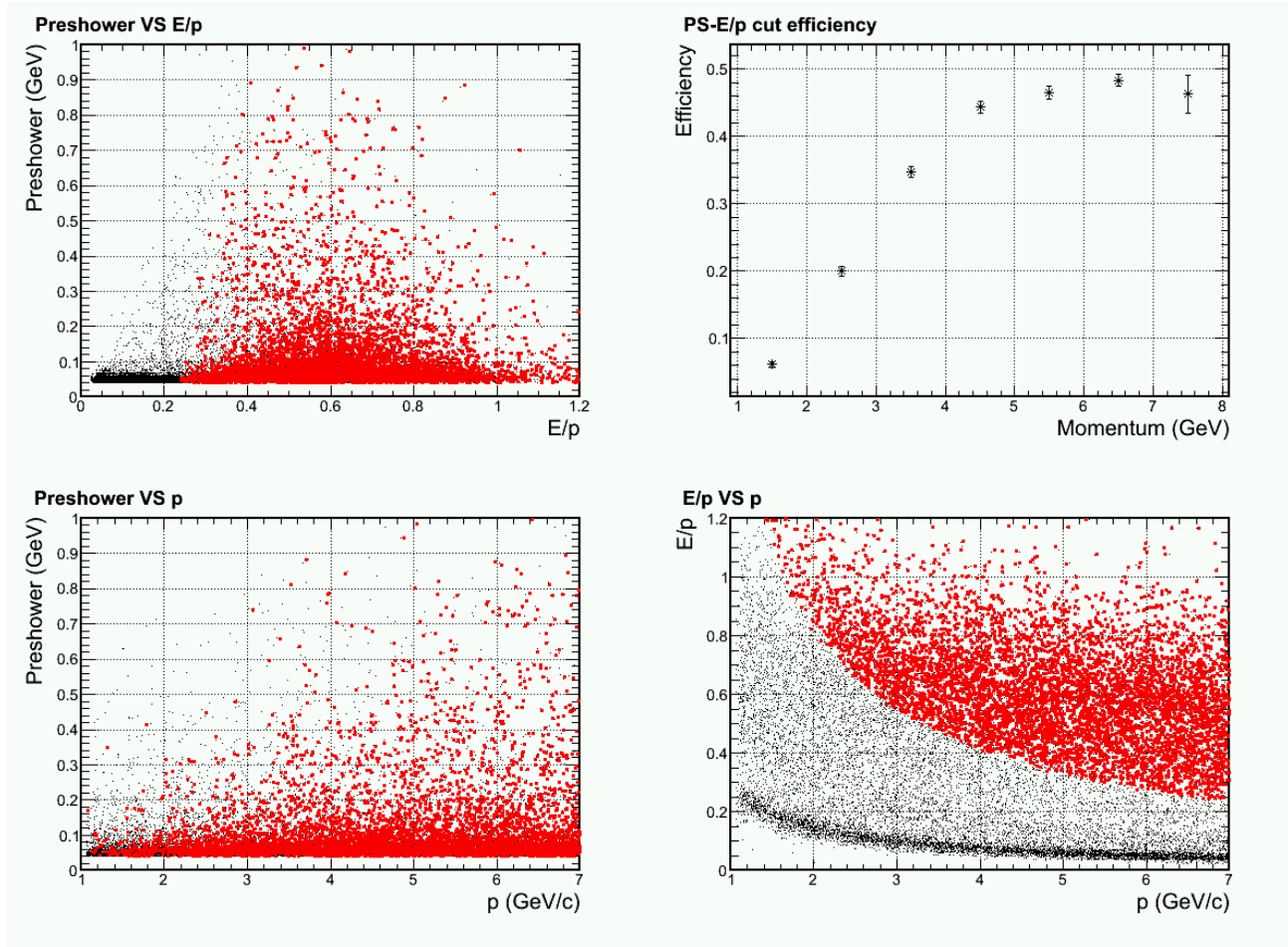
Updated: pion rejection

Only electron and pi- background used



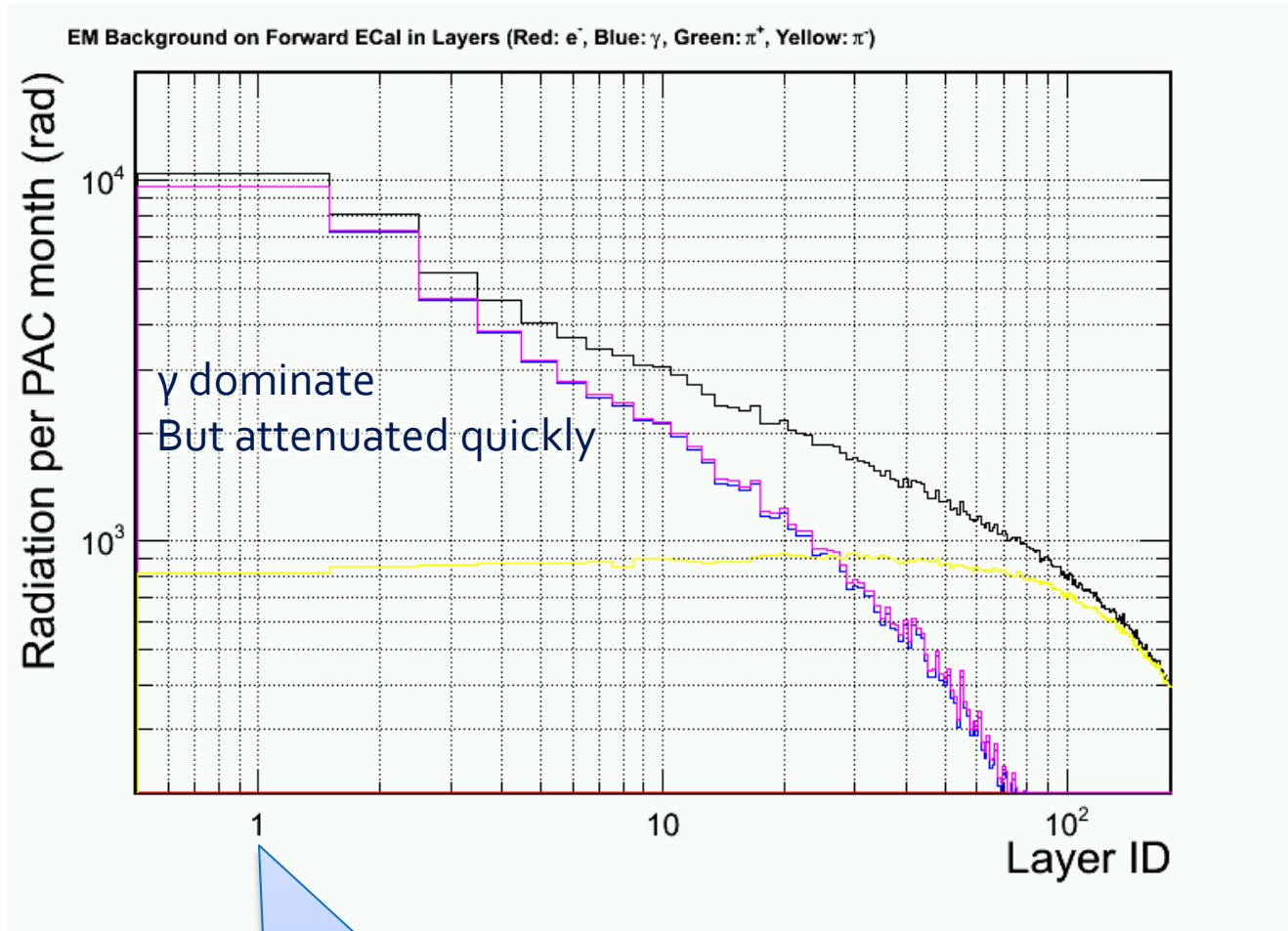
PVDIS trigger turn on curve

2GeV electron cut based on shower Hex1+6 cluster only



PVDIS – current baffle (with direct γ)

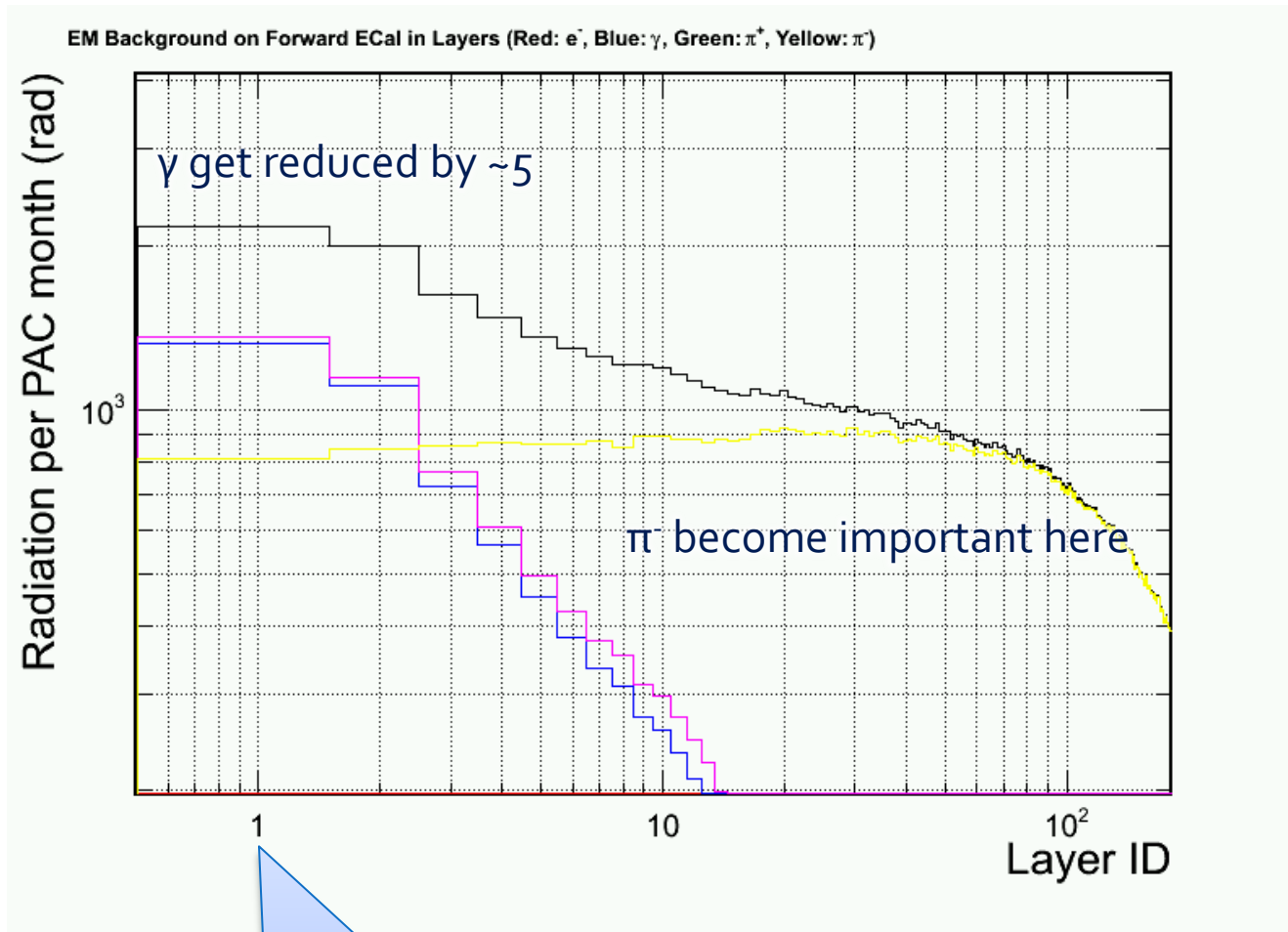
From Dec Collaboration Meeting



Layer #1 is 2cm
preshower scint.

PVDIS – preview for a baffle w/o direct γ

From Dec Collaboration Meeting



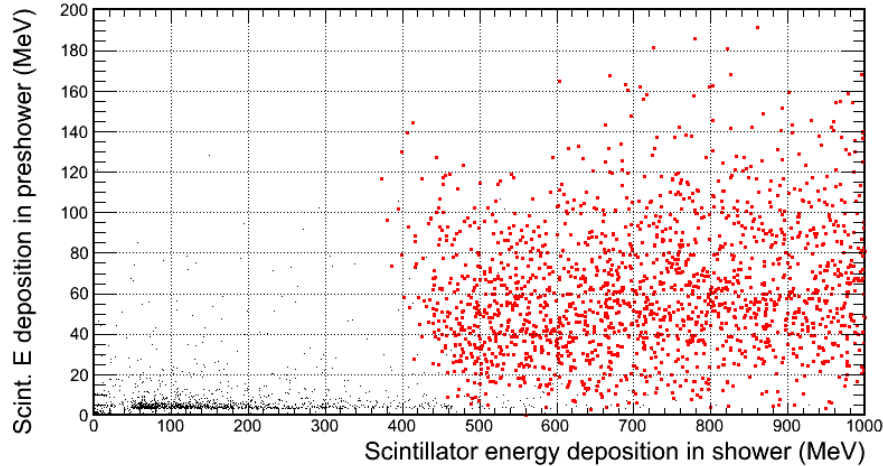
Layer #1 is 2cm
preshower scint.

Last Version of Background Simulation (reported last week)

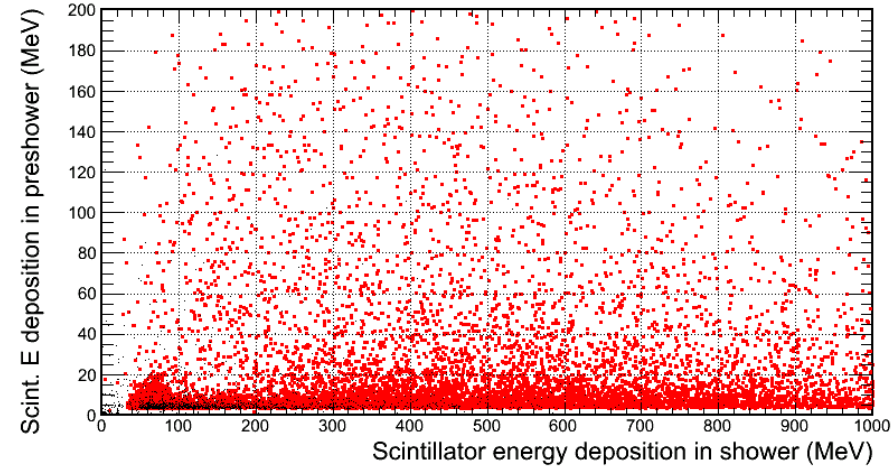


Why it is hard – lots of deep pions

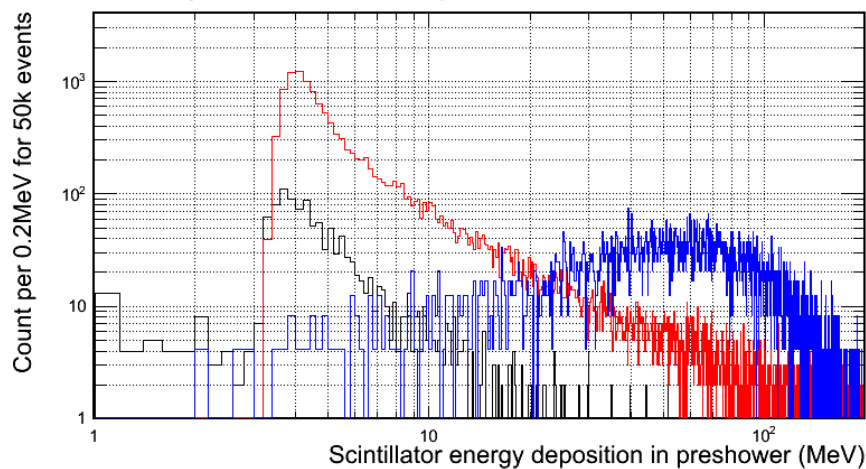
Raw signal distribution, Black: background, Red: Electrons



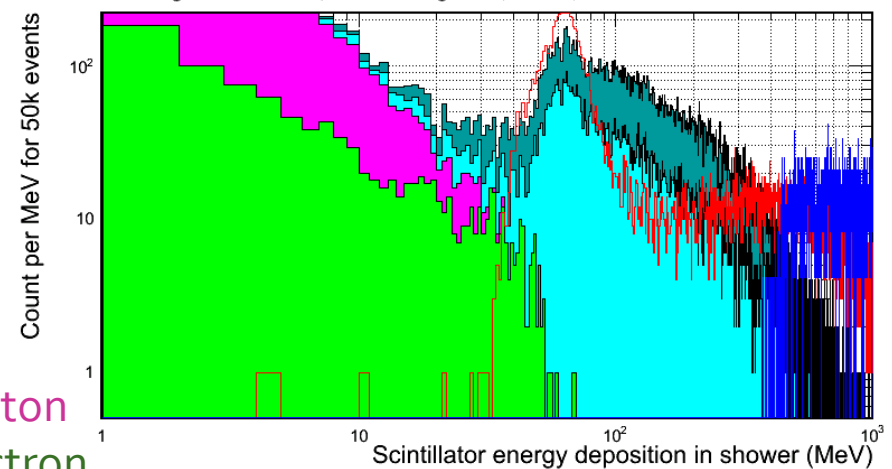
Raw signal distribution, Black: background, Red: π^-



Preshower raw signal distribution, Black: background, Red: π^- , Blue: e^-



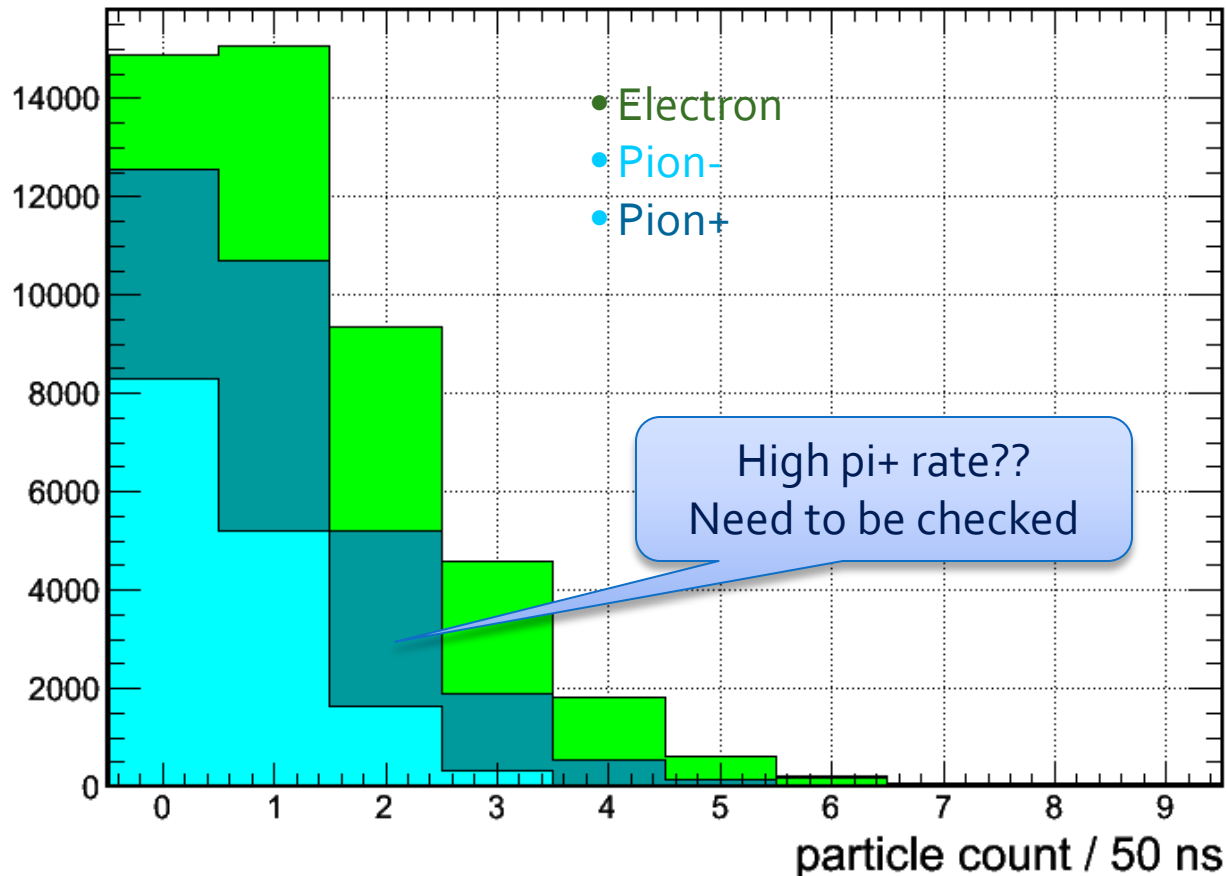
Shower raw signal distribution, Black: background, Red: π^- , Blue: e^-



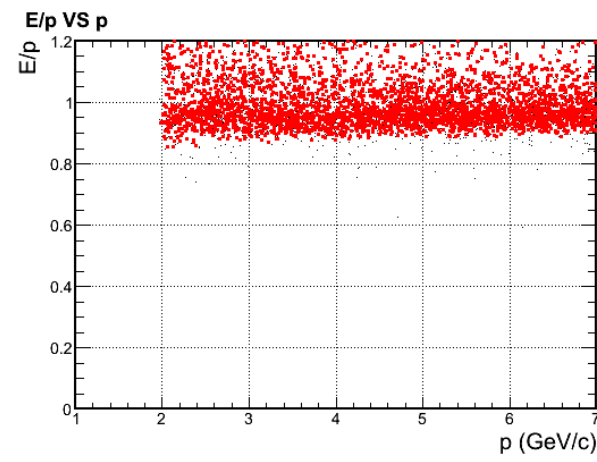
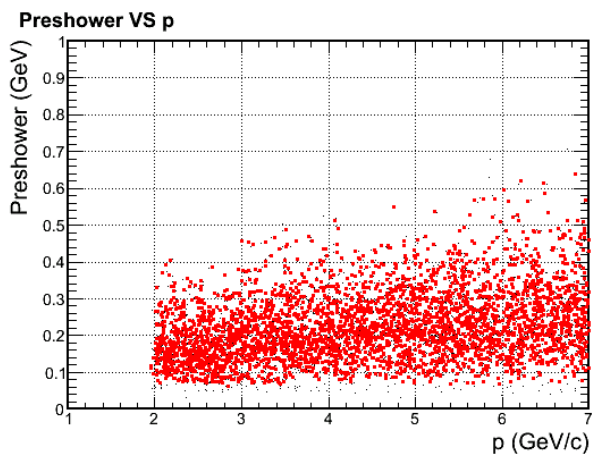
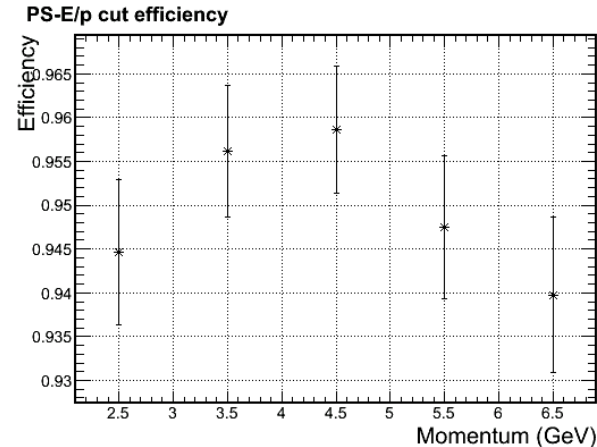
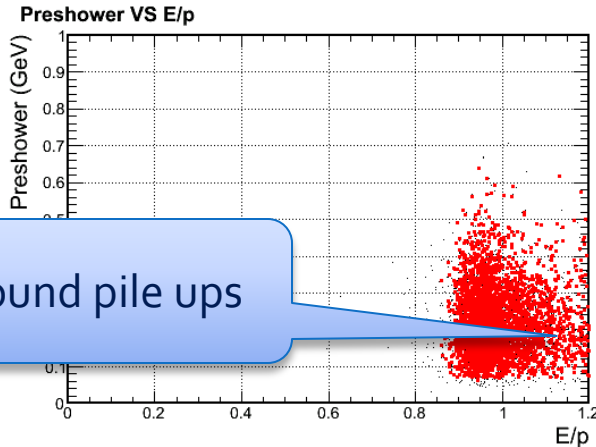
- Photon
- Electron
- Pion- Pion+

Per-event pion rate for 1+6 hexagon cluster at inner radius

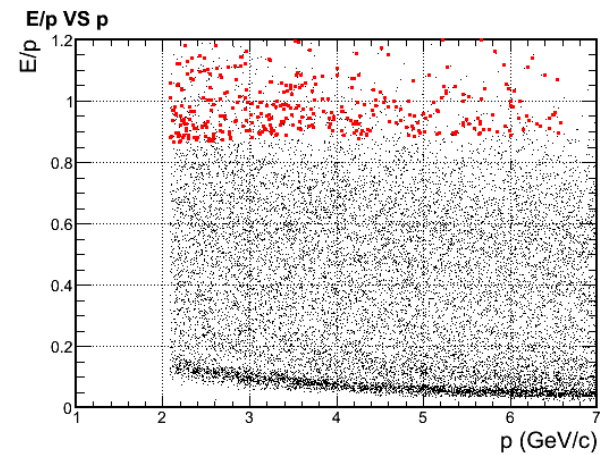
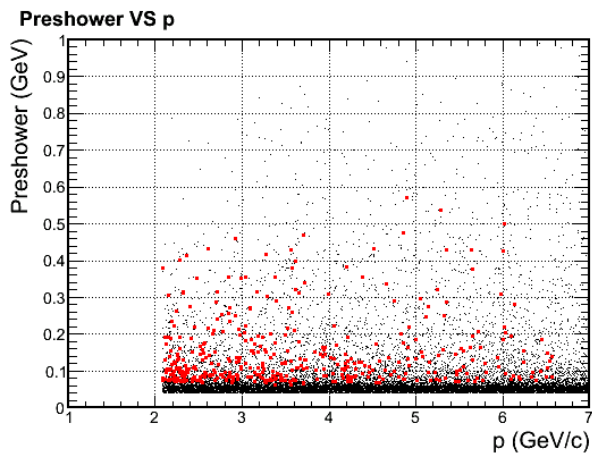
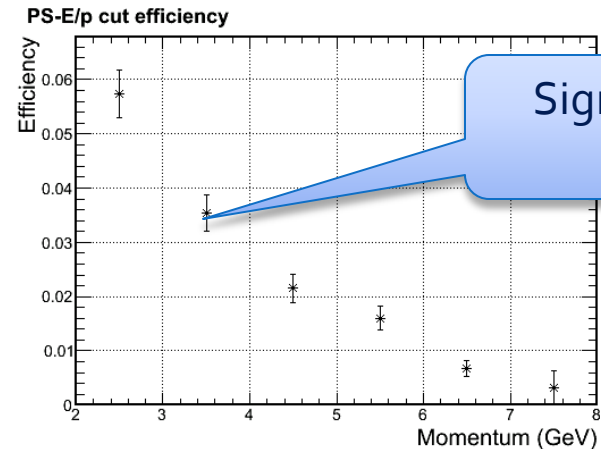
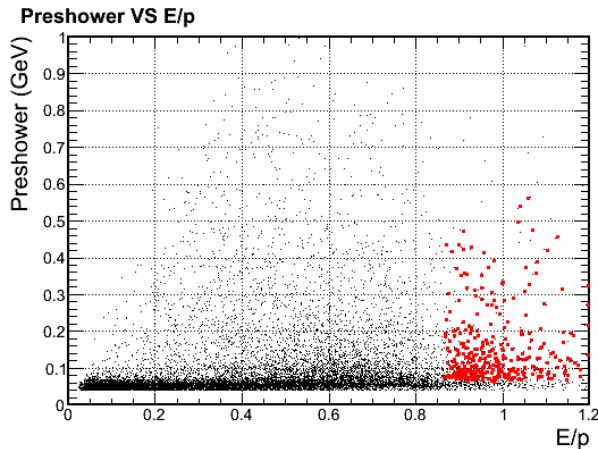
Background particle per trigger



Electron efficiency w/ background at inner radius. Ignore gamma and pi+ bgd



Pion efficiency w/ background at inner radius. Ignore gamma and pi+ bgd



What we can further try

- ▶ Position or kinematic dependent trigger threshold and cut threshold
- ▶ Use track multiplicity to assist calorimeter cuts