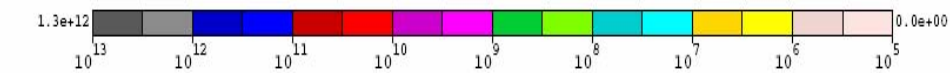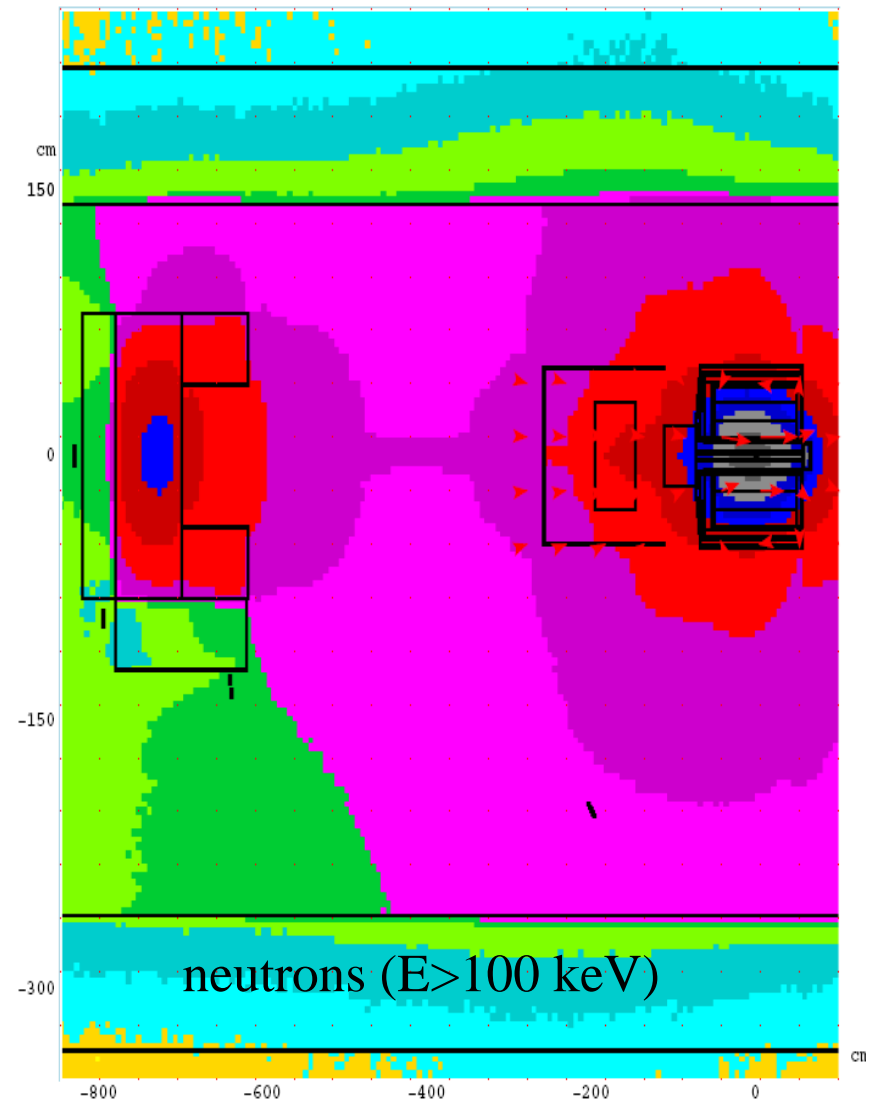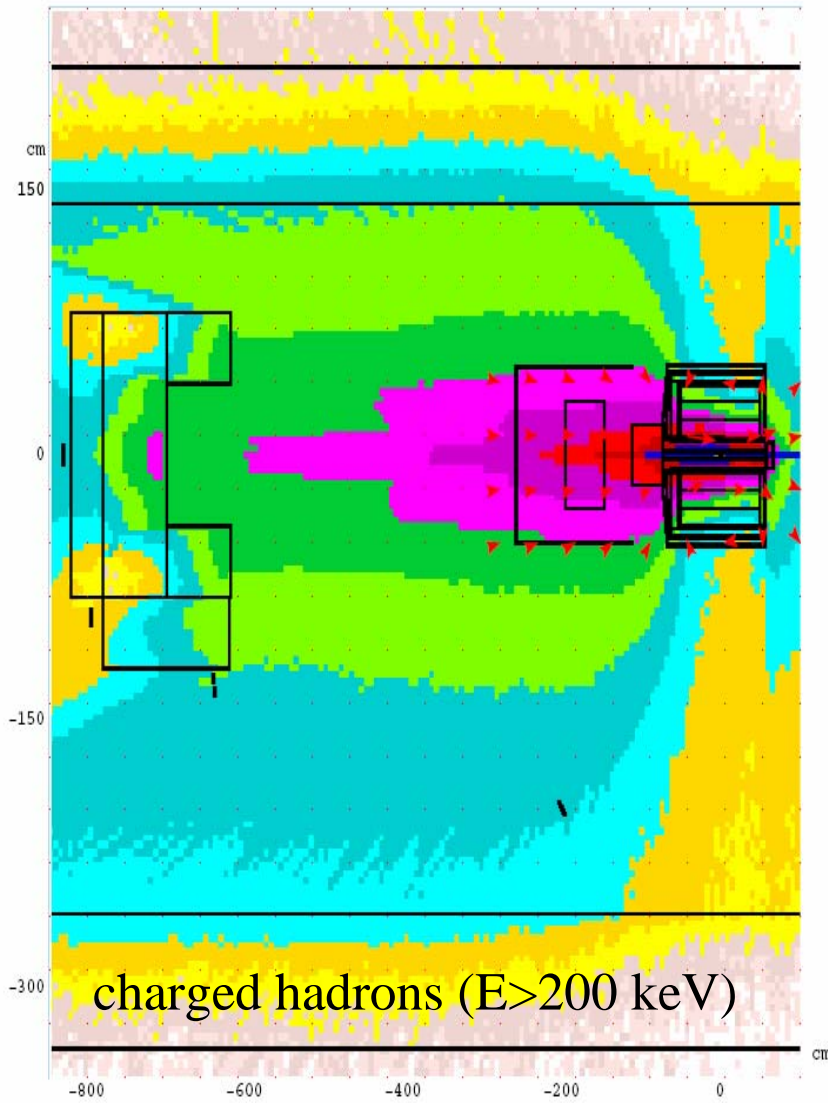# PARTICLE FLUX CALCULATION-III

Sergei Striganov

Fermilab

May 24, 2006

Detector positions and particle fluxes per pulse (3 10^{13} protons).

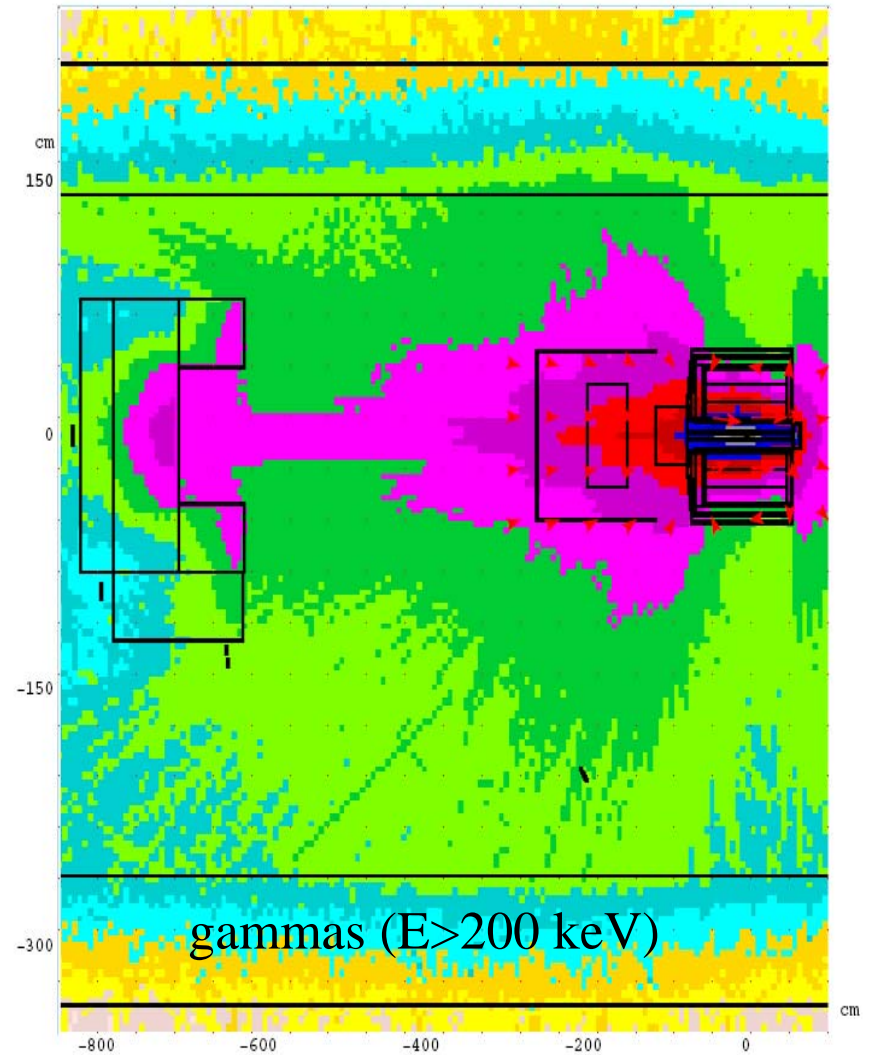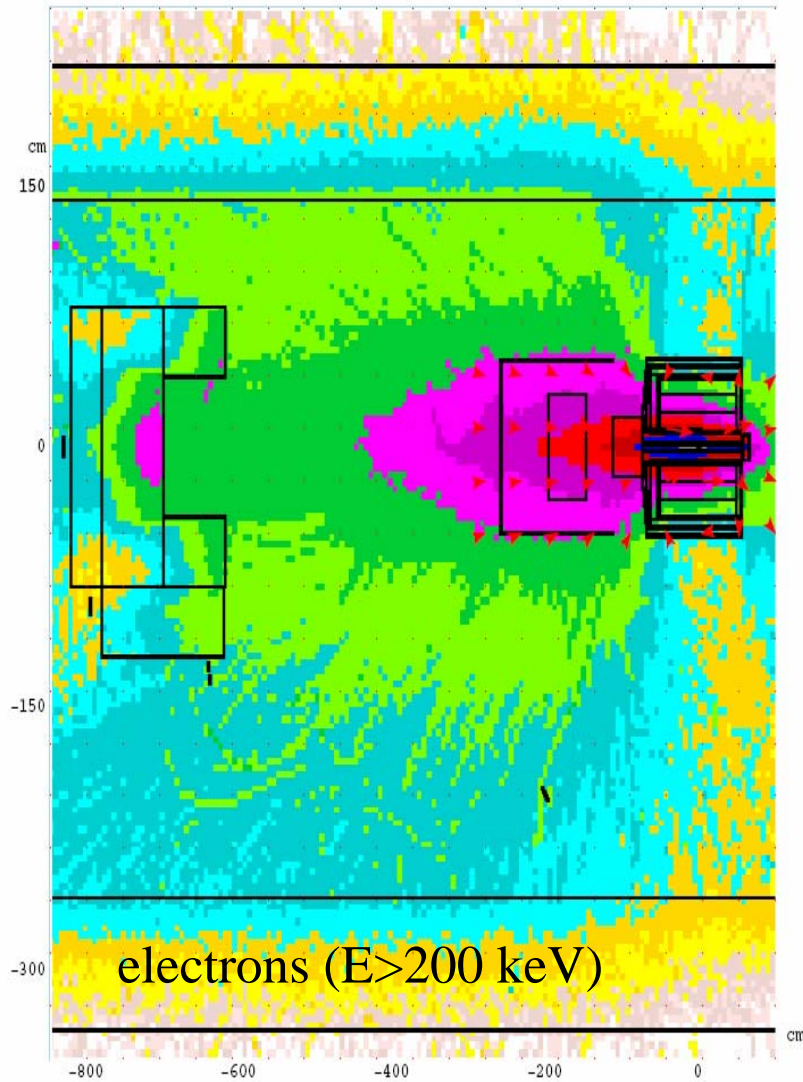charged hadrons (E>200 keV)

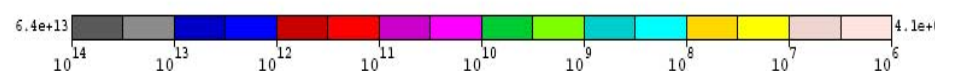neutrons (E>100 keV)

Detector positions and particle fluxes per pulse (3 10^{13} protons).

electrons (E>200 keV)

gammas (E>200 keV)

Energy spectra (0 degree detector). Blue lines – all particles, red lines- particles created in attenuator.
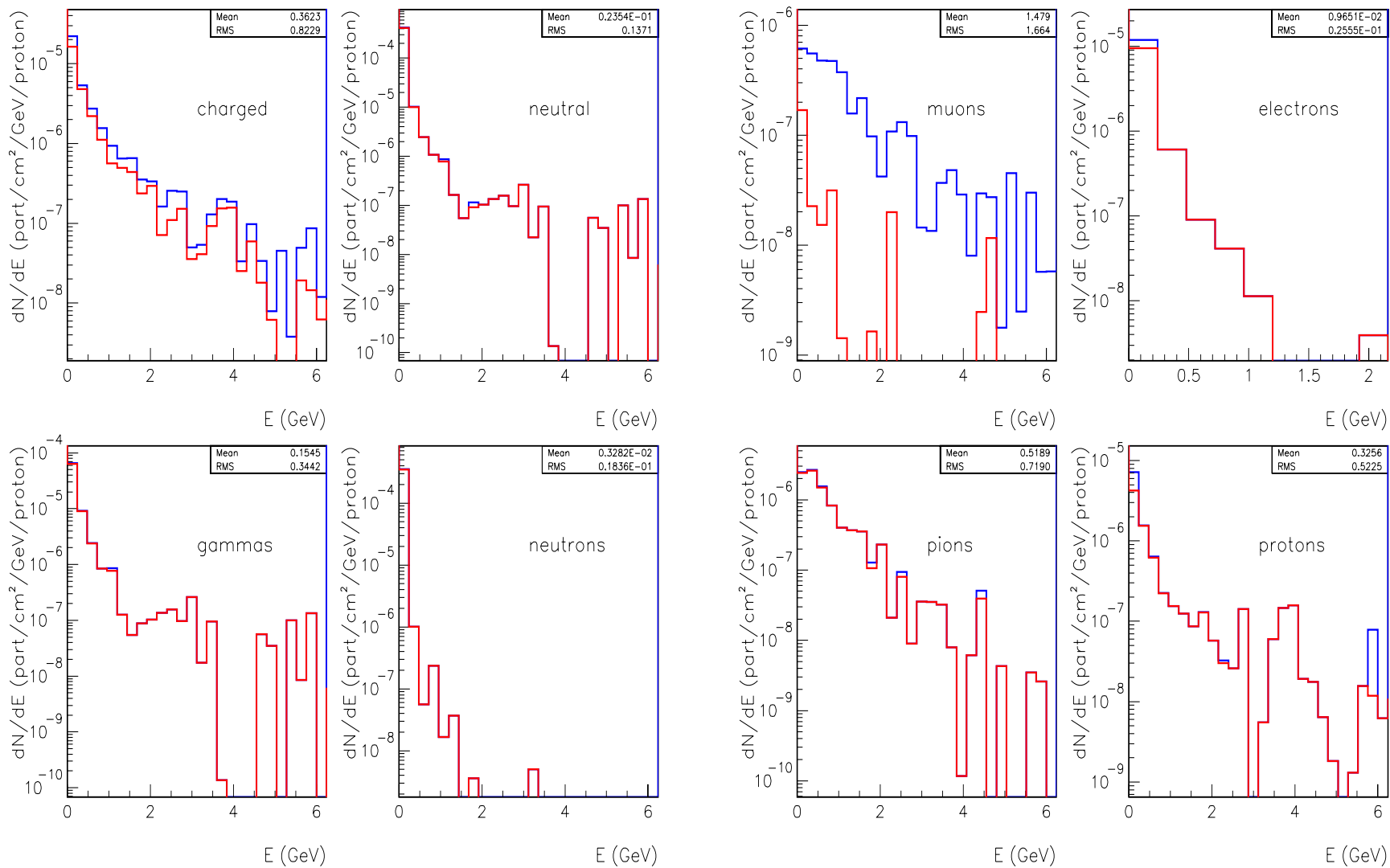
Energy spectra at 0 degree (detector 1)

Energy spectra of charged particles at 0 degree (detector 1)
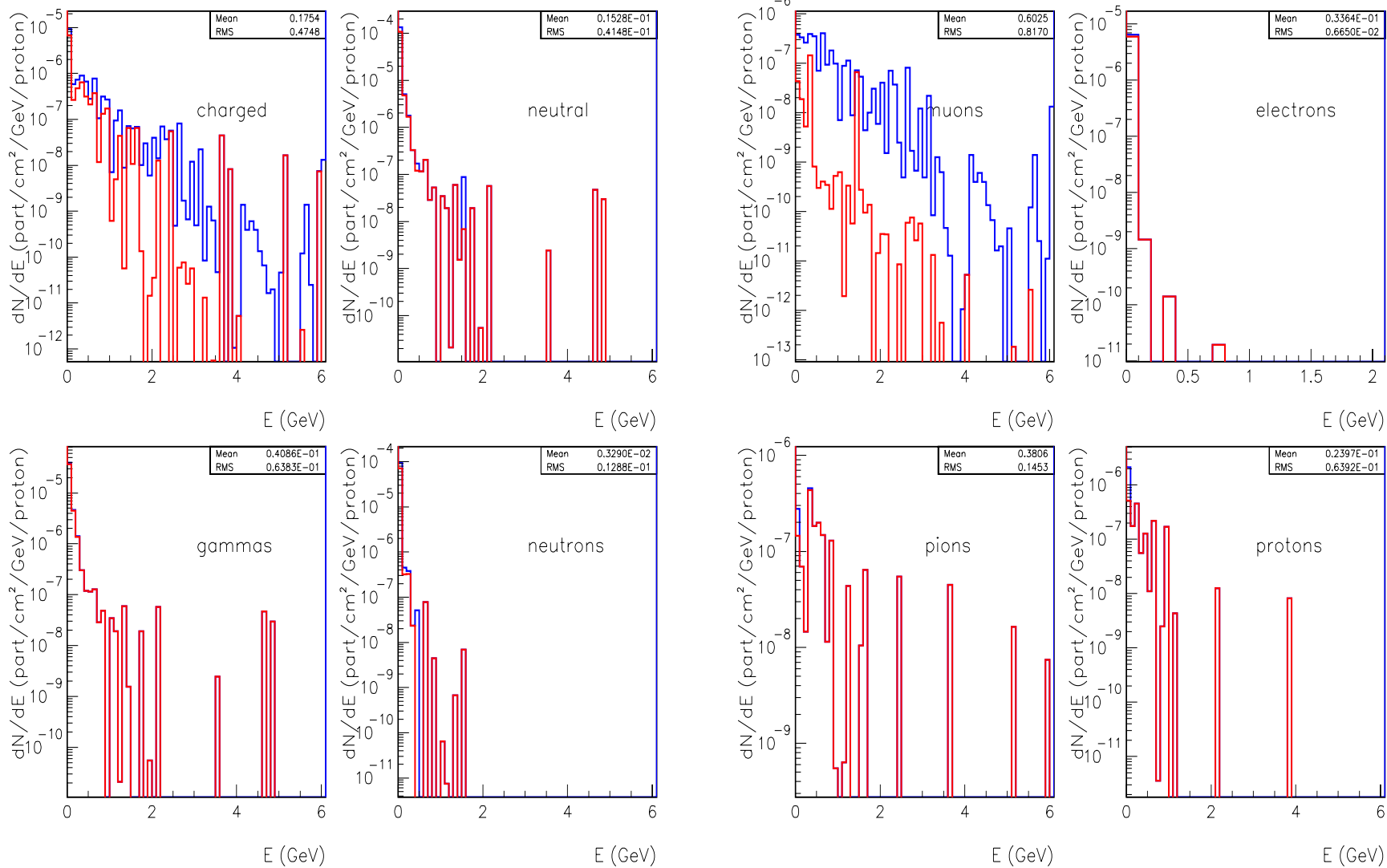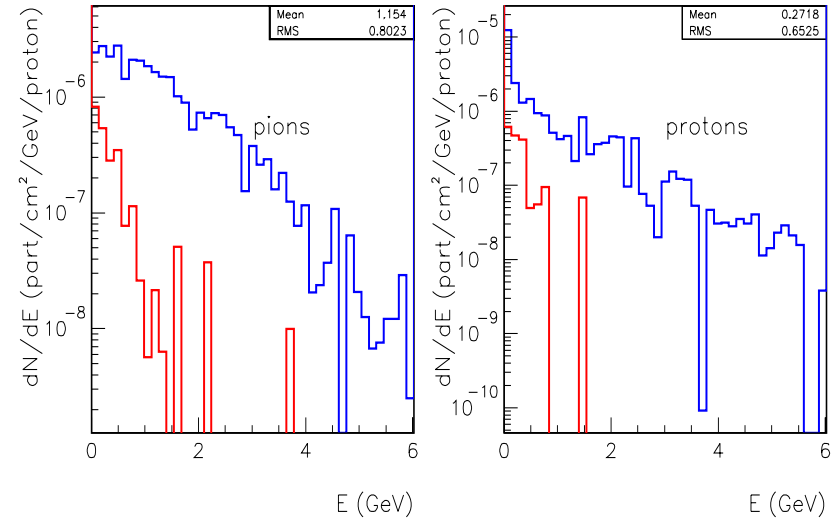
Energy spectra (6.7 degree detector). Blue lines – all particles, red lines- particles created in attenuator.

Energy spectra at 6.7 degree (detector 2)

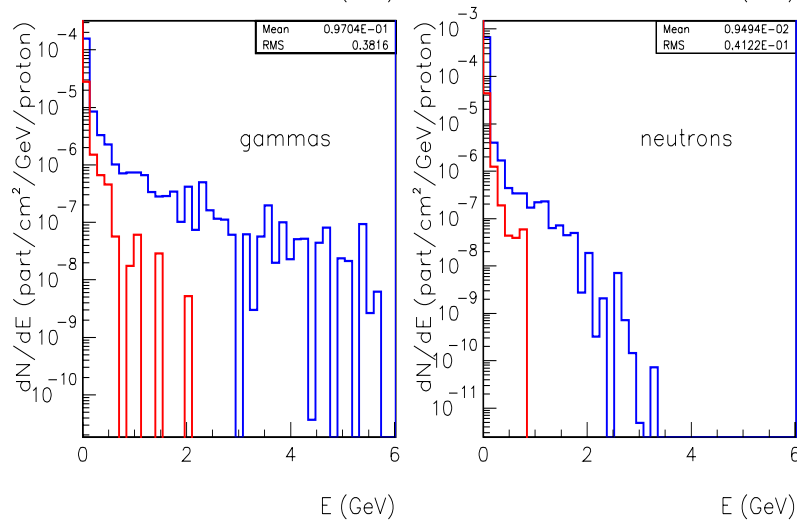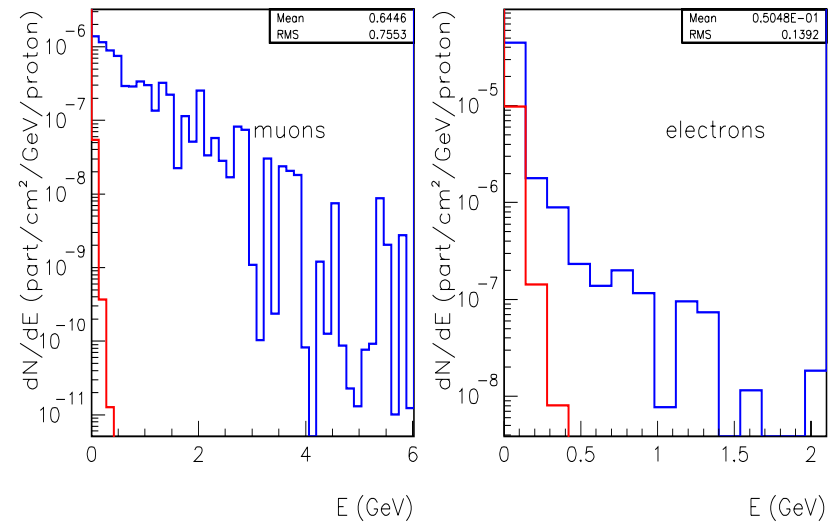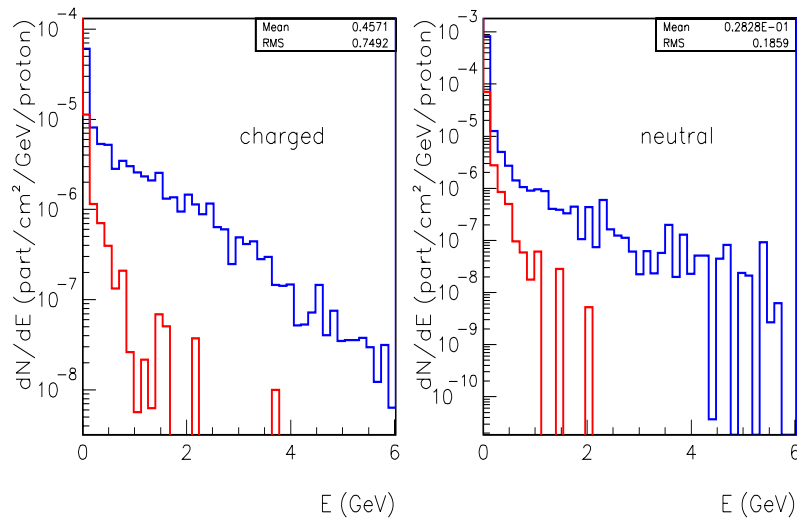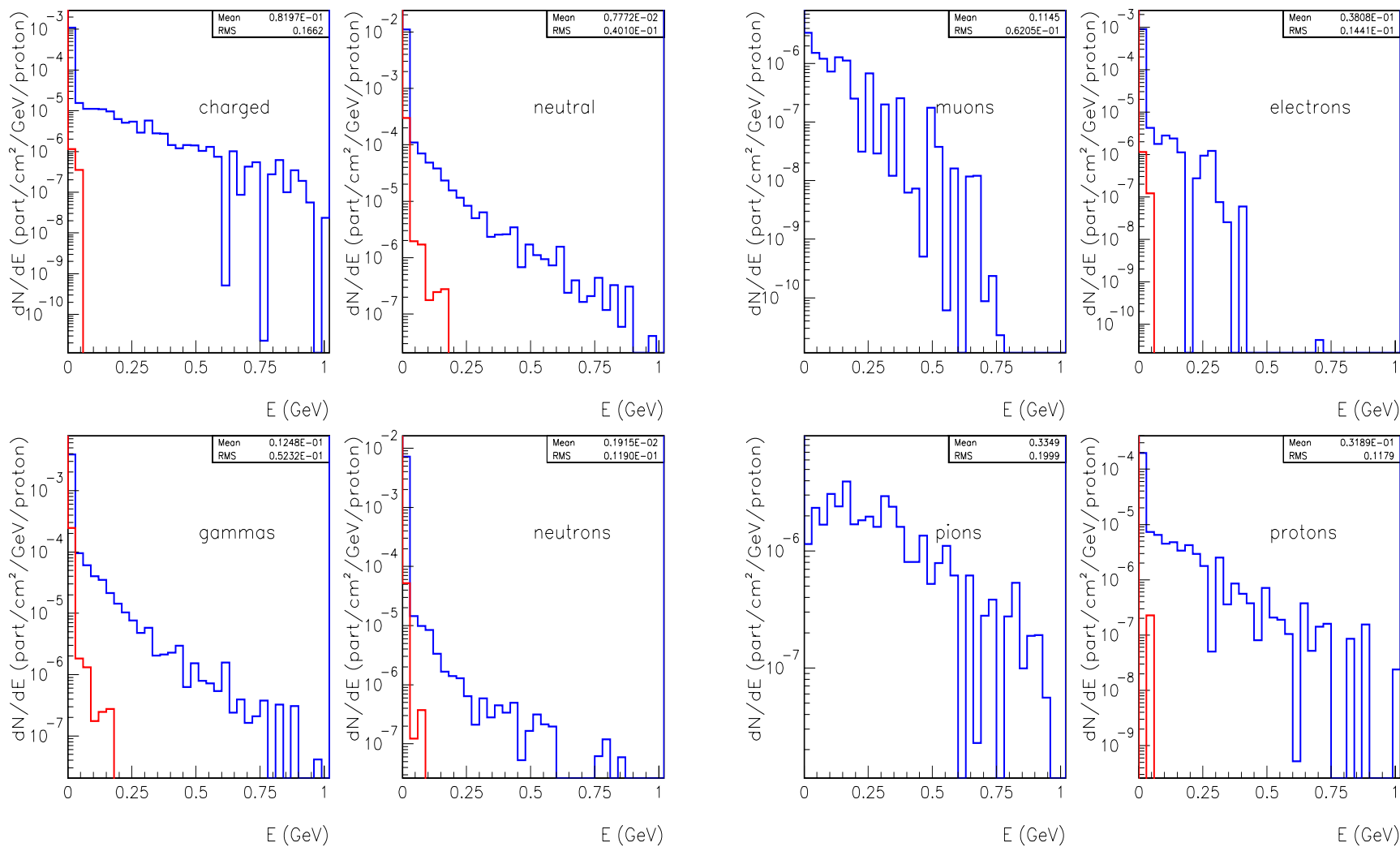Energy spectra of charged particles at 6.7 degree (detector 2)

Energy spectra (11.5 degree detector). Blue lines – all particles, red lines- particles created in attenuator.

Energy spectra at 12 degree (detector 3)

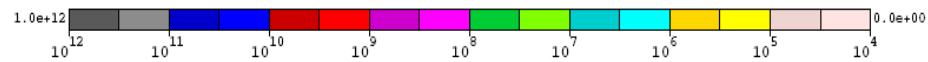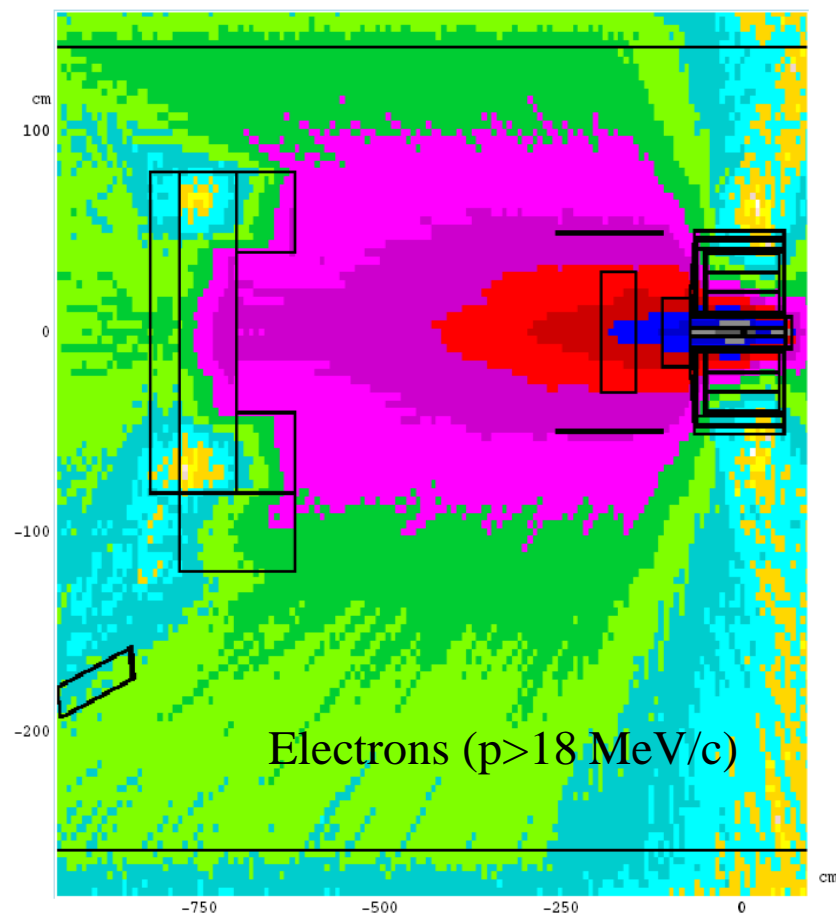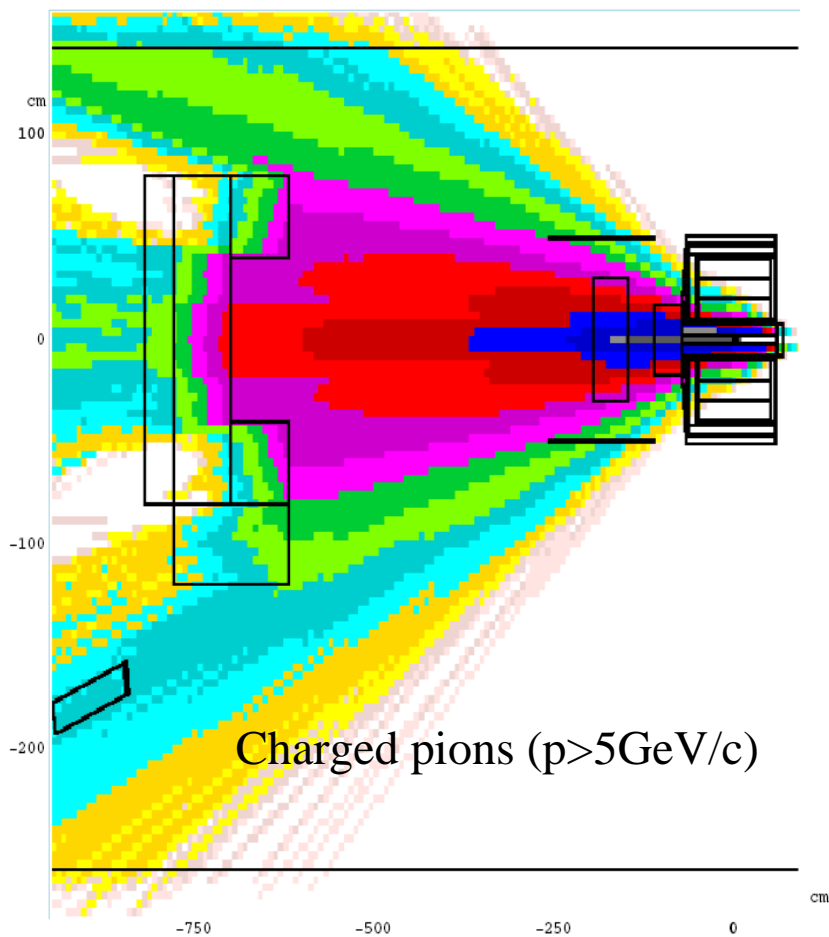Energy spectra of charged particles at 12 degree (detector 3)

Energy spectra (45 degree detector). Blue lines – all particles, red lines- particles created in attenuator.

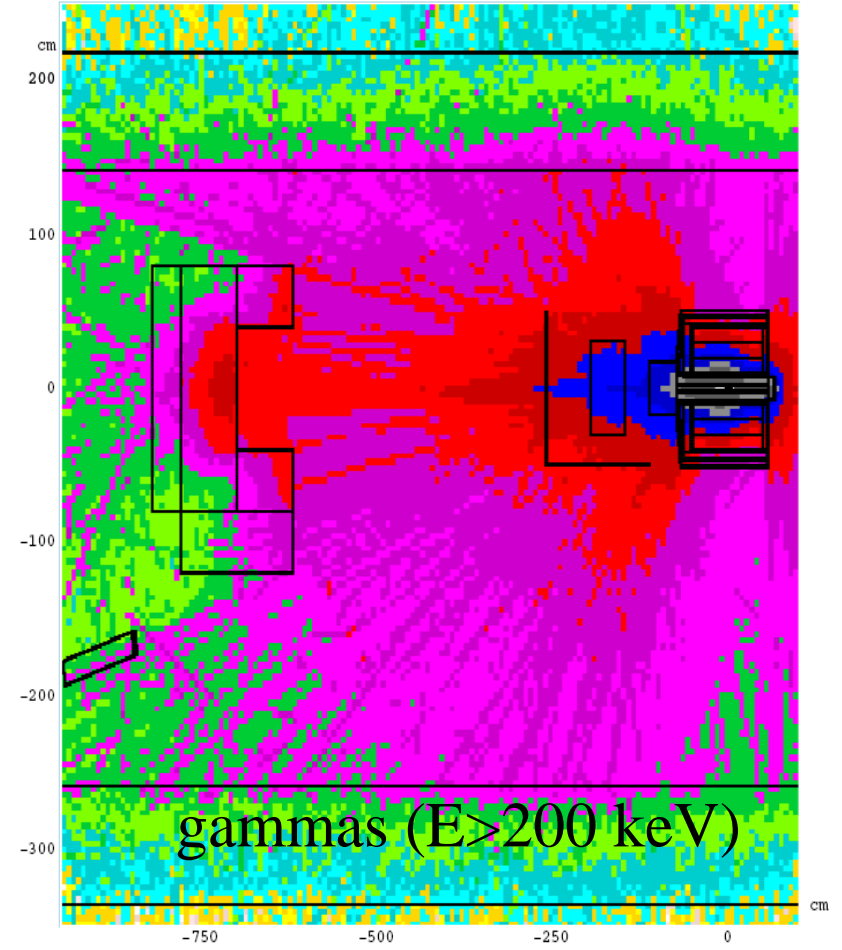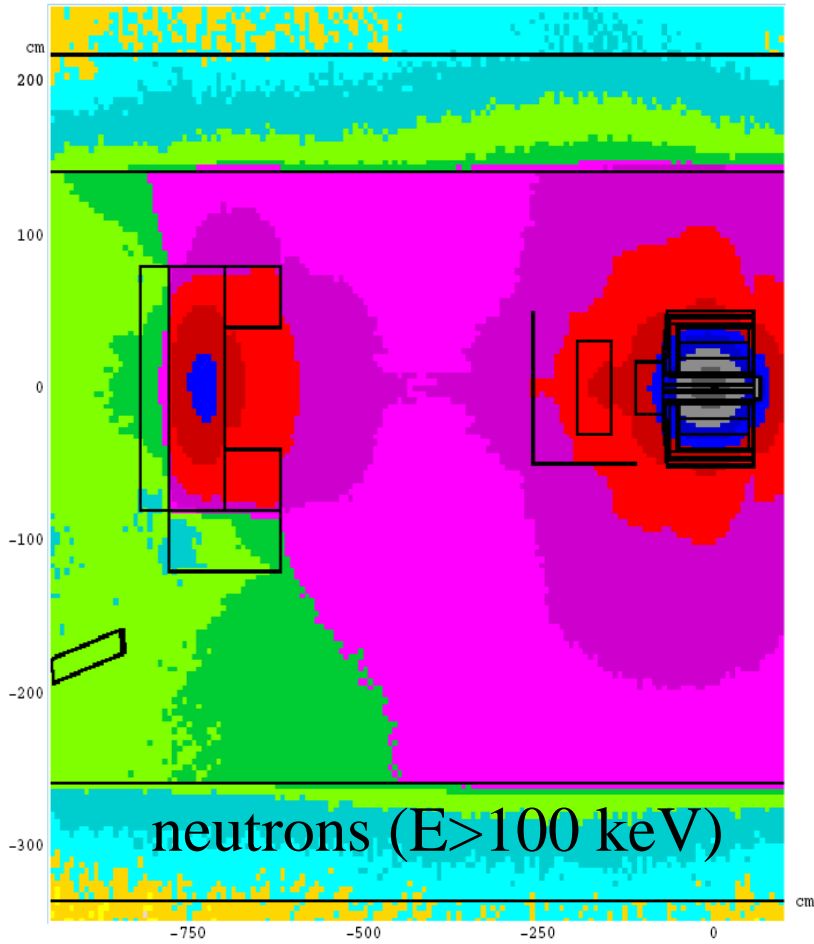Energy spectra at 45 degree (detector 4)

Energy spectra of charged particles at 45 degree (detector 4)
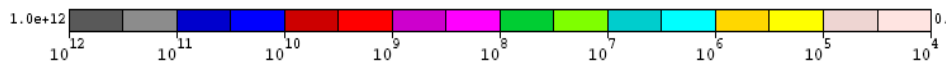
Particle fluxes per pulse (3 10^{13} protons).

Charged pions (p>5GeV/c)

Electrons (p>18 MeV/c)

Neutral particles background. Particle fluxes per pulse (3 10^13 protons).
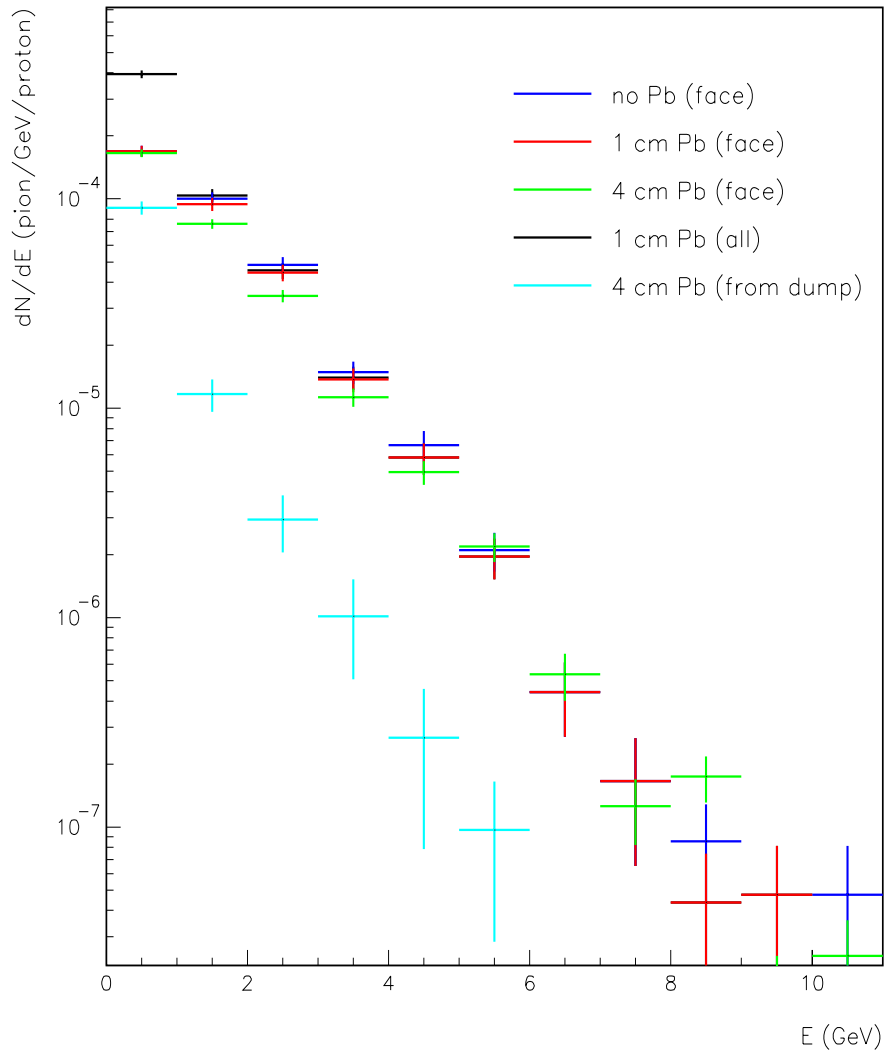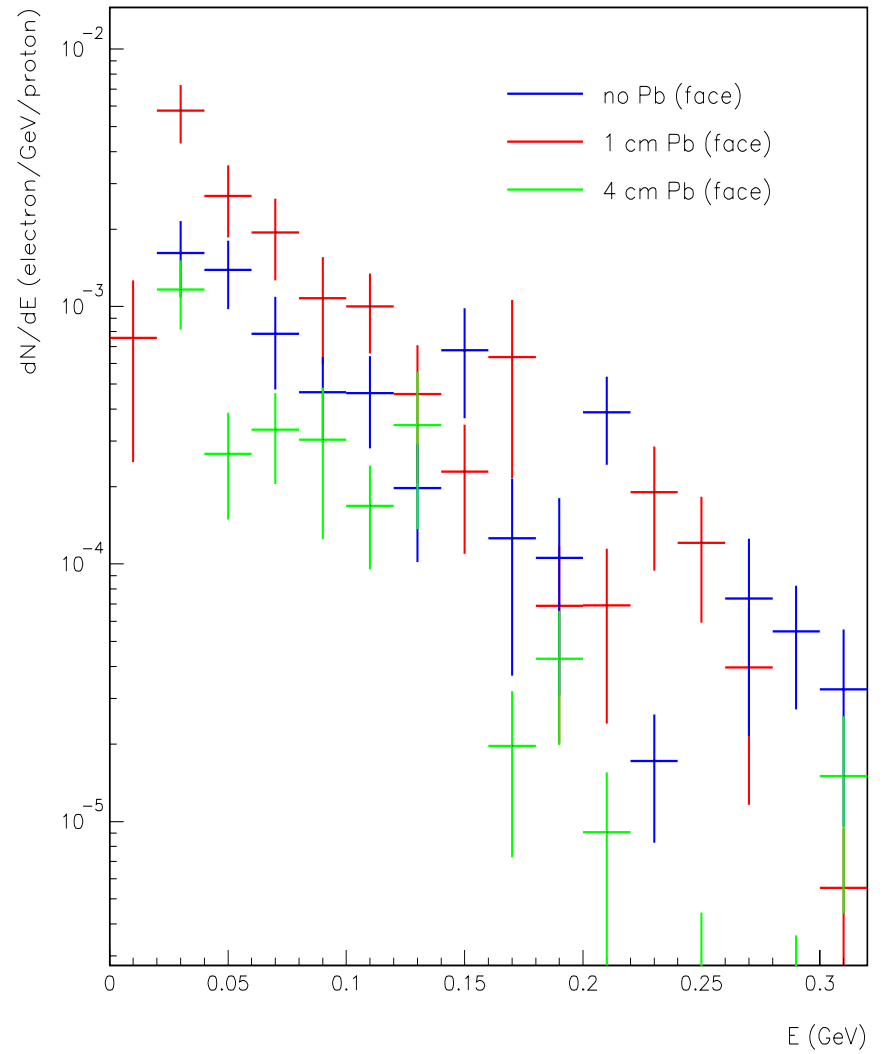

neutrons (E>100 keV)

gammas (E>200 keV)

Shielding efficiency.

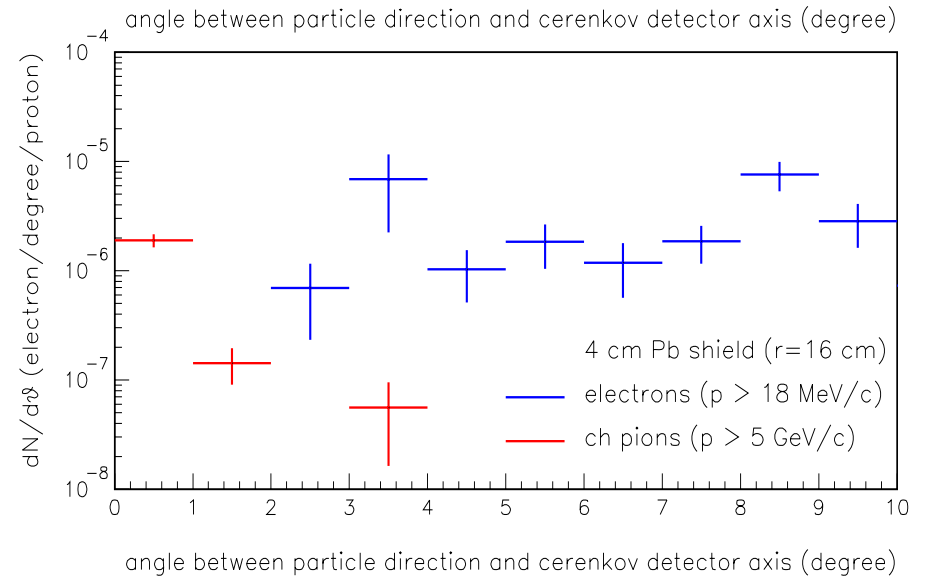## Electron flux (p>18MeV/c) per pulse (3 10^{13} protons).
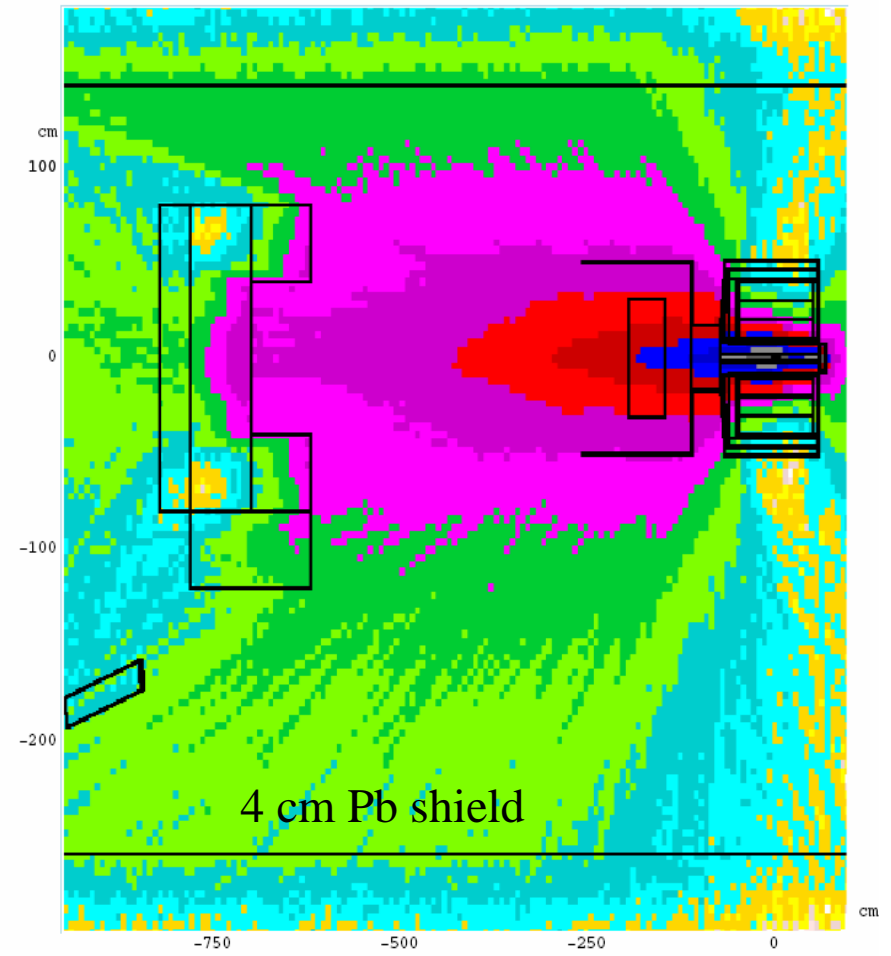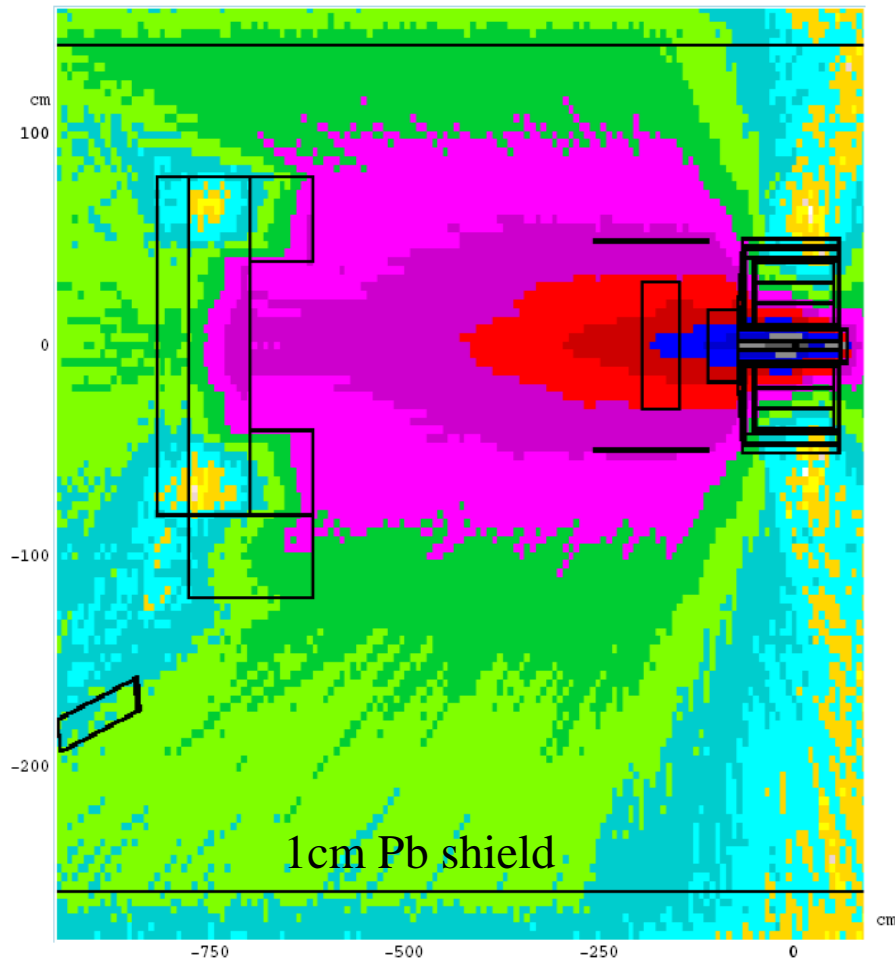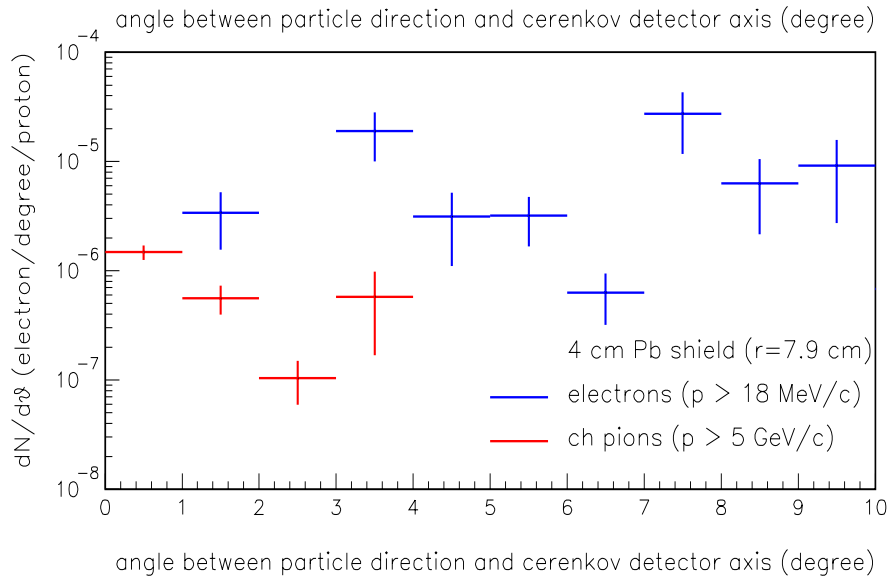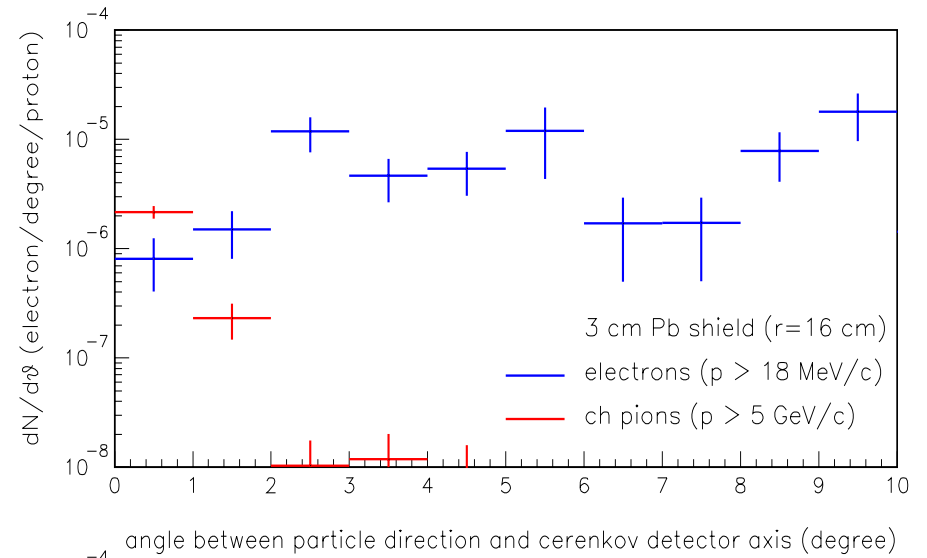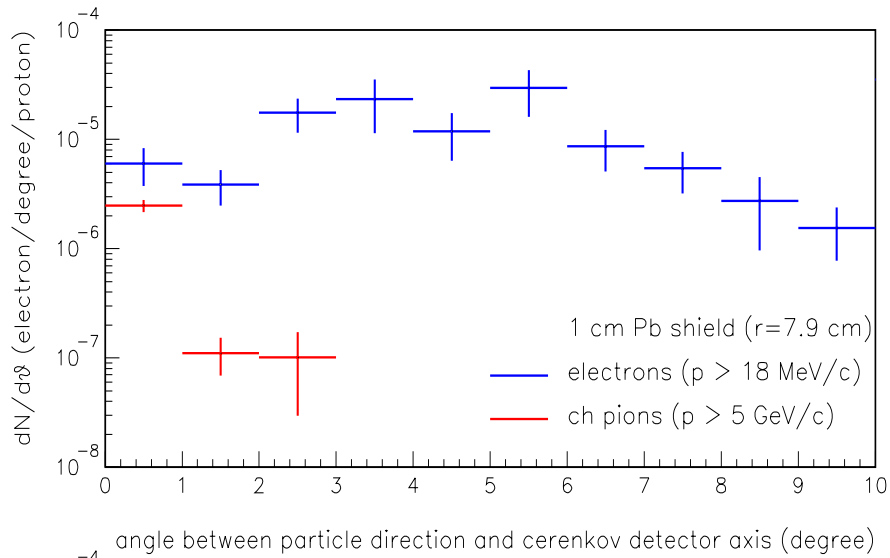
Energy spectra

Energy spectra of charged pions in cerenkov detector (11 degree)

Energy spectra of electrons in cerenkov detector (11 degree)

Electrons and charged pions in cherenkov detector

Conclusions

- To estimate signal/background ratio in scintillator detectors we need to specify efficiency of detector as function of energy and particle type

- It is possible to obtain reasonable signal/background ratio in cherenkov detector using lead shielding. More detailed calculations (including simulation of cherenkov light?) is needed.