PARTICLE FLUX CALCULATION-II

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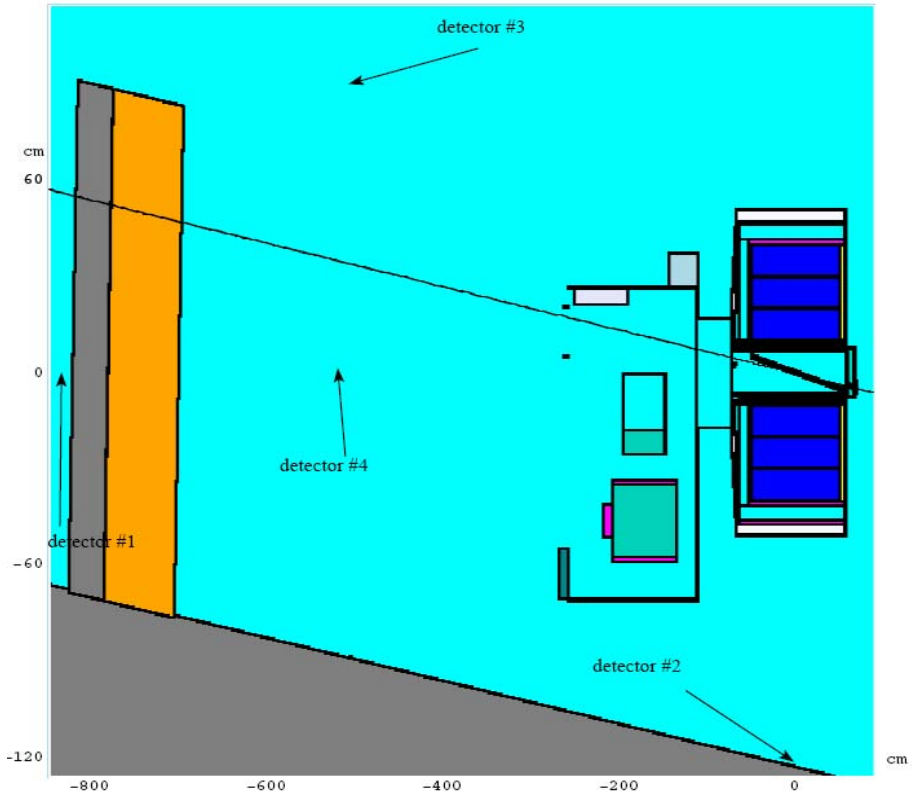
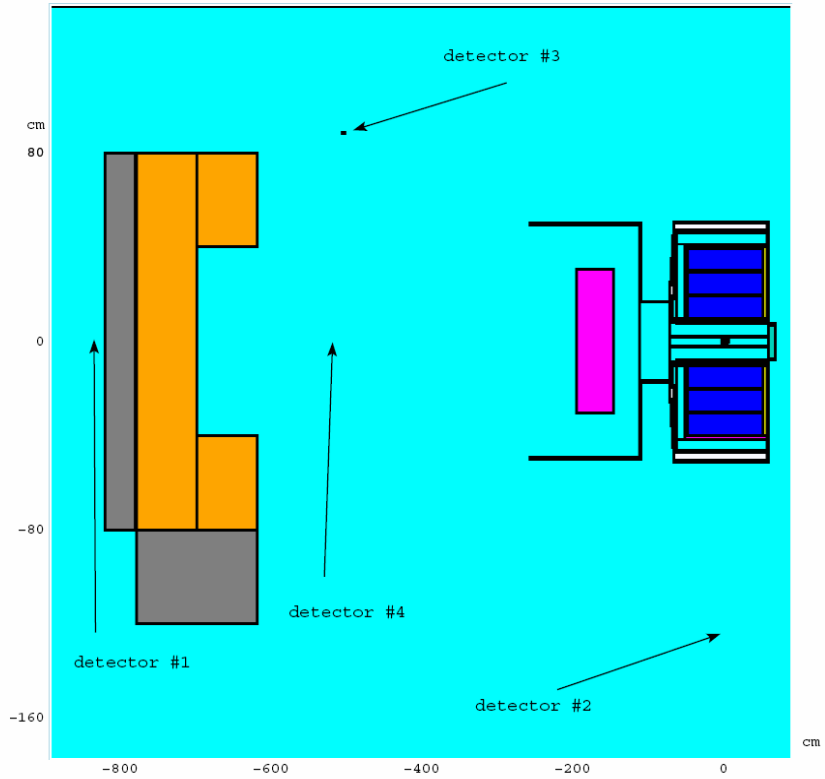
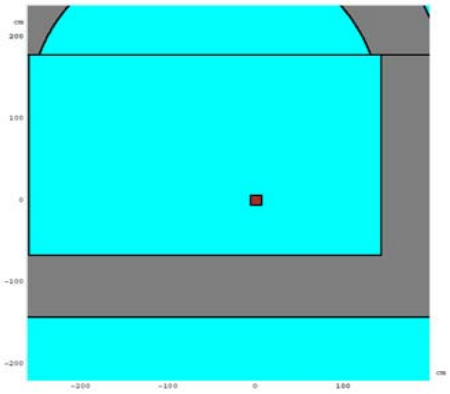
Fermilab
May 10, 2006

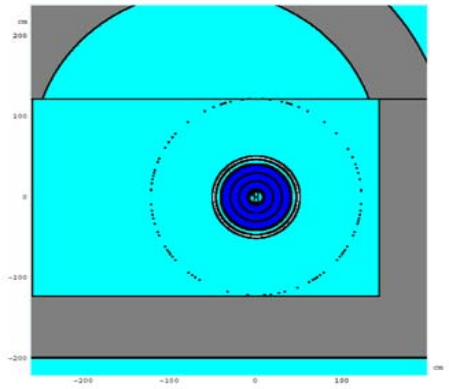
Detector positions

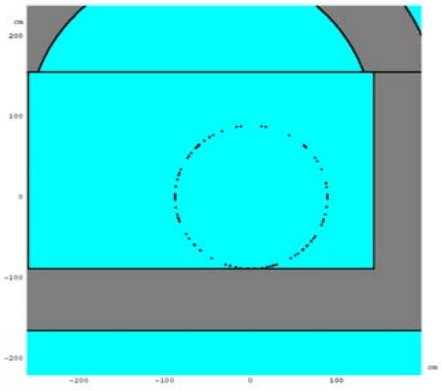


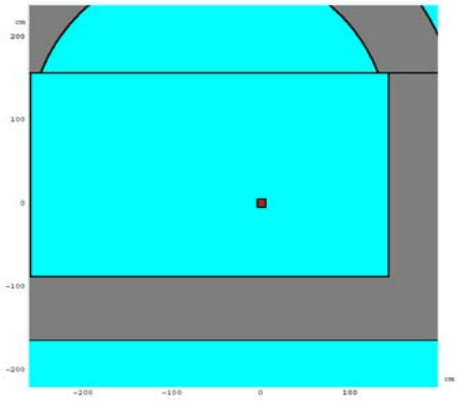


detector 1 – rectangle - 12 × 12 ×0.1 cm
detector 2 – ring - 122 × 3× 0.1 cm
detector 3 – ring - 88.5 × 3 × 0.1 cm
detector 4 - rectangle - 10 × 10 × 0.1 cm

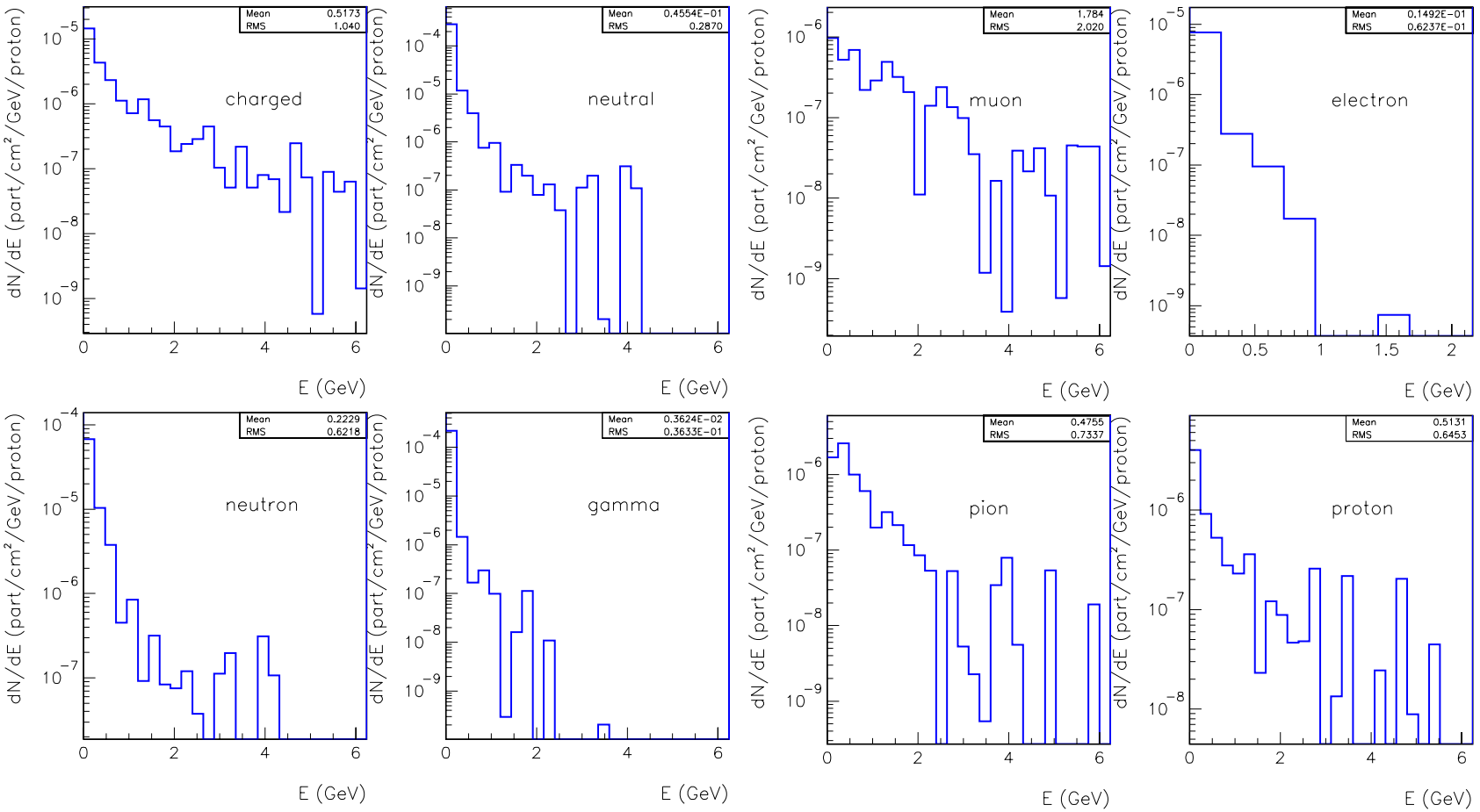








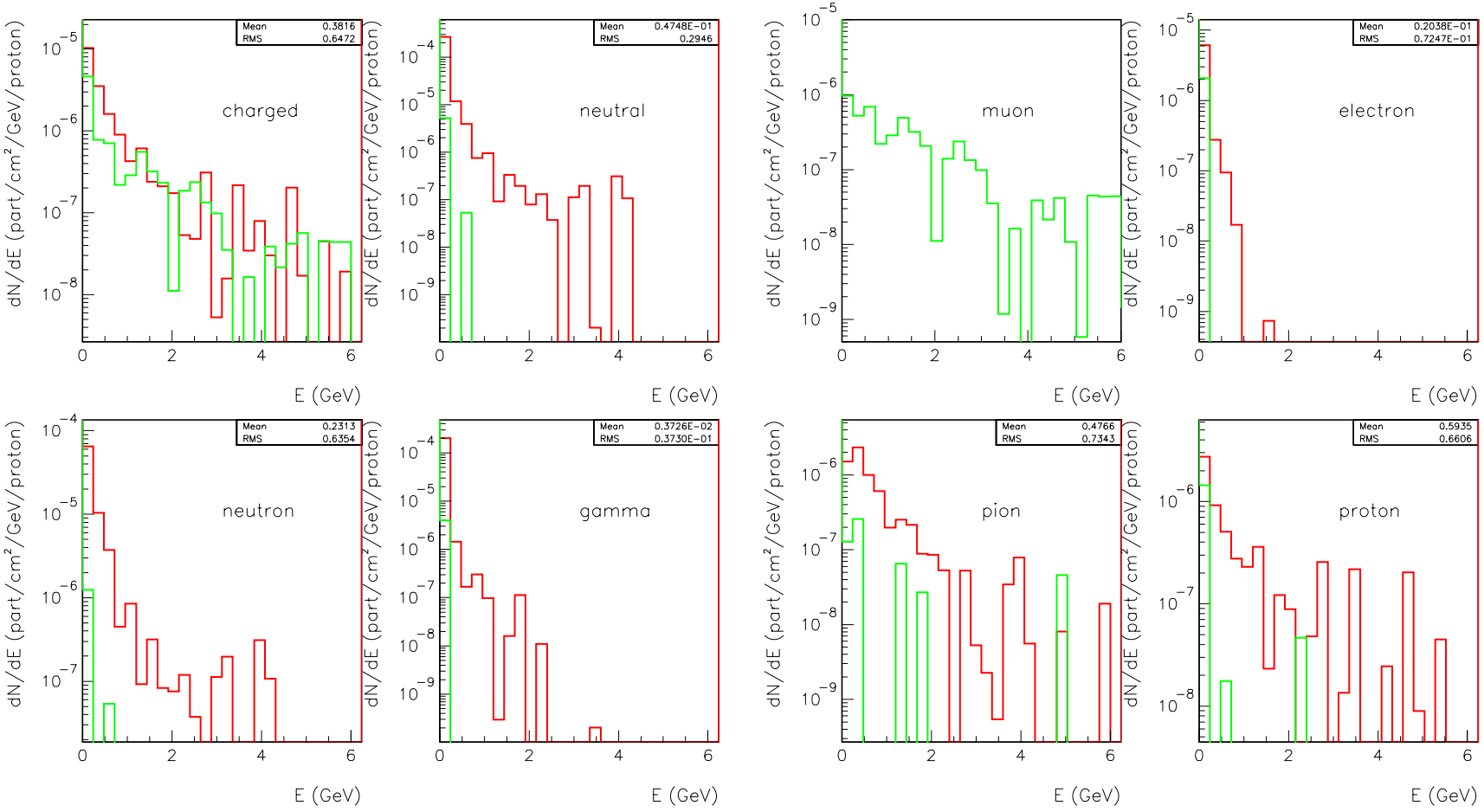
Energy spectra (detector 1)



Energy spectra at 0 degree

Energy spectra of charged particles at 0 degree (detector 1)

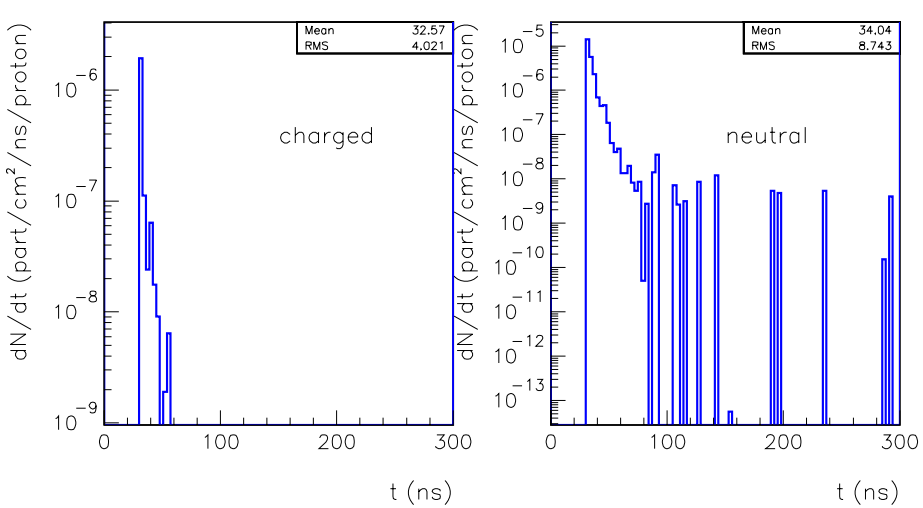
Energy spectra (detector 1): red line – from attenuator green line – from target



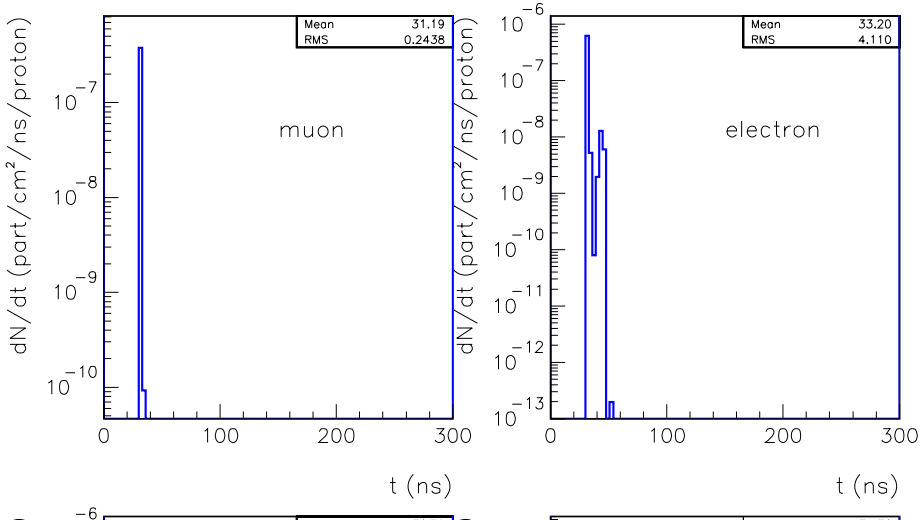
Energy spectra at 0 degree (detector 1)

Energy spectra of charged particles at 0 degree (detector 1)

Time distribution (detector 1)

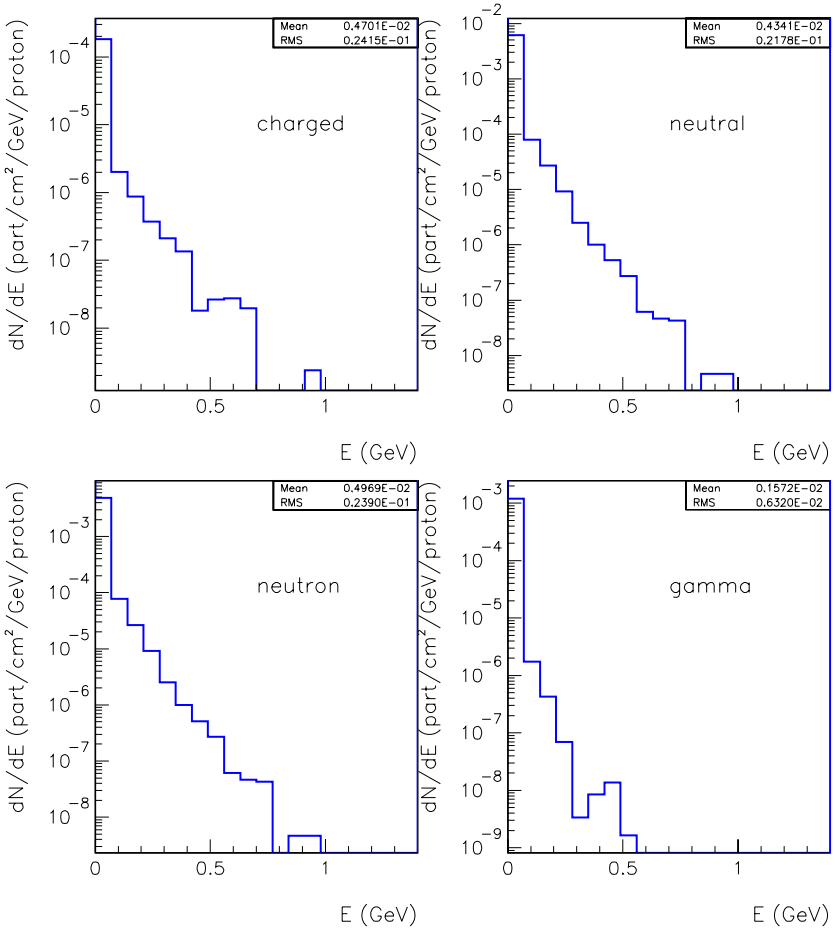


Time distribution at 0 degree (detector 1)

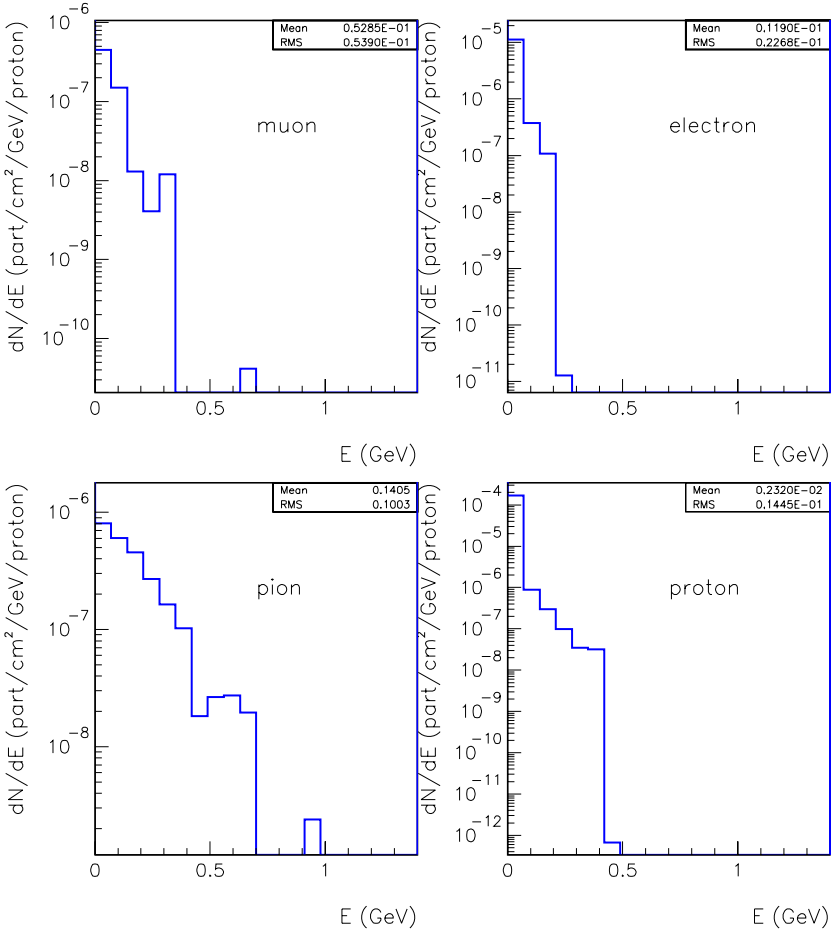


Time distribution of charged particles at 0 degree (detector 1)

Energy spectra (detector 2 – 90 degree)

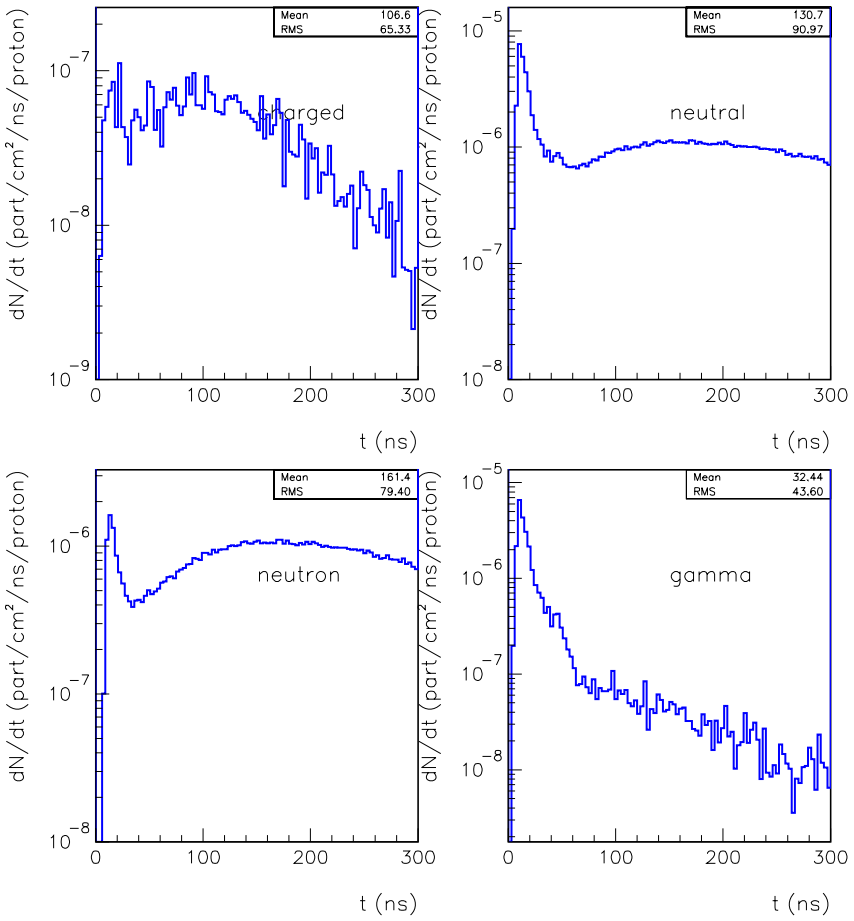


Energy spectra at 90 degree

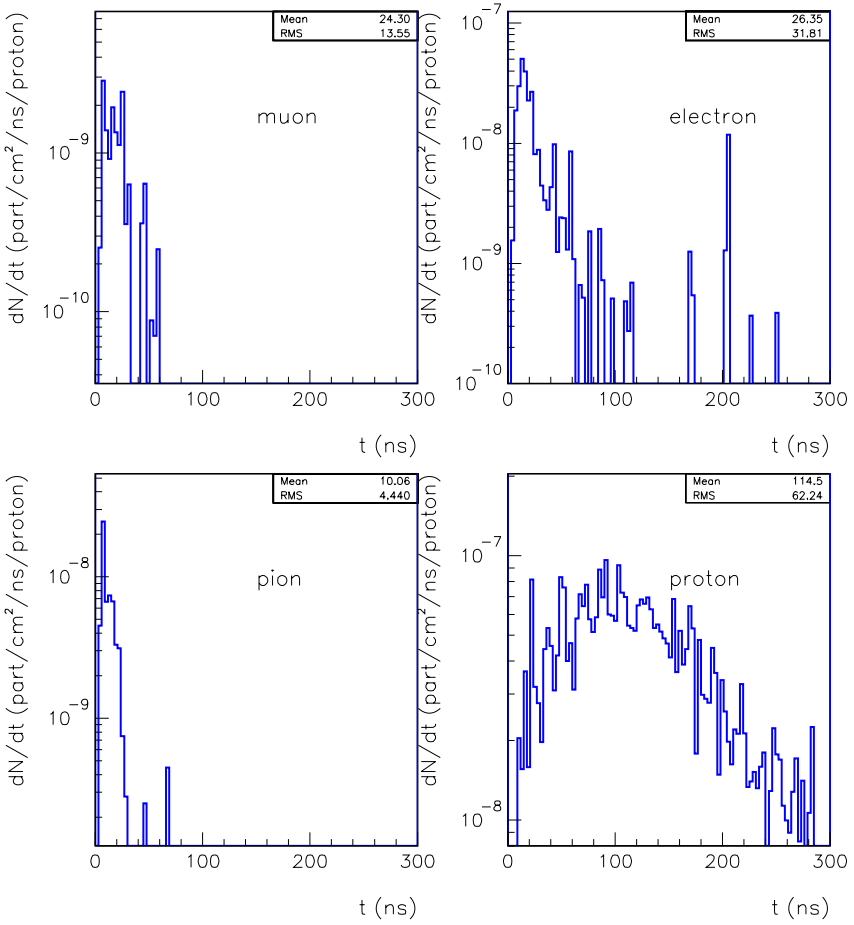


Energy spectra of charged particles at 90 degree

Time distribution (detector 2 – 90 degree)

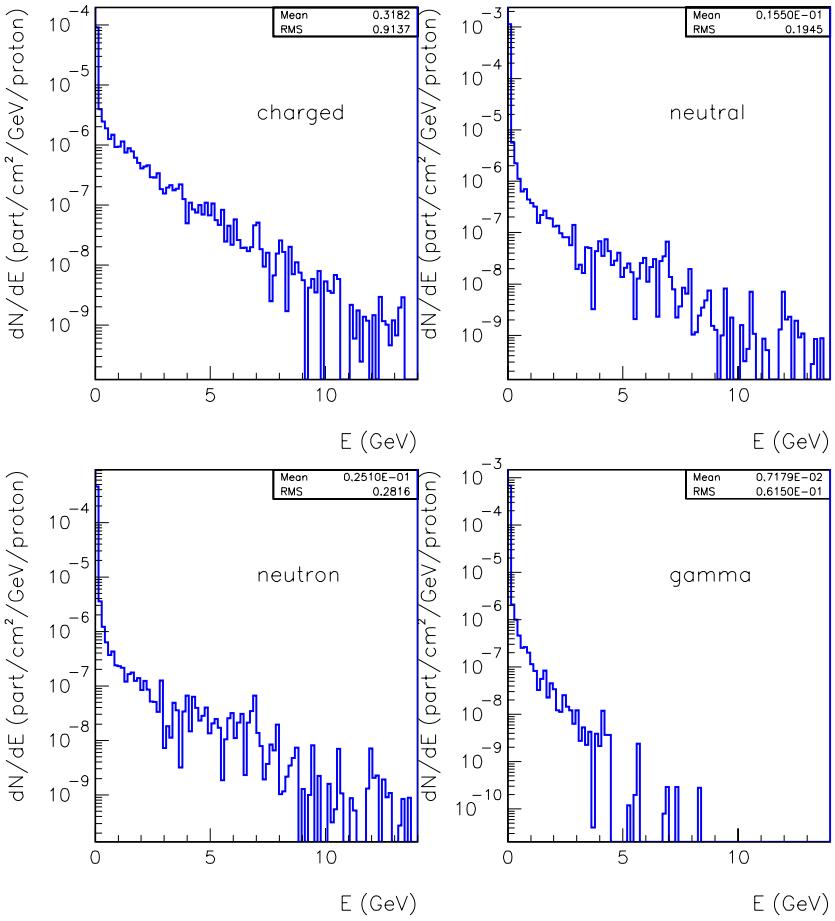


Time distributions at 90 degree

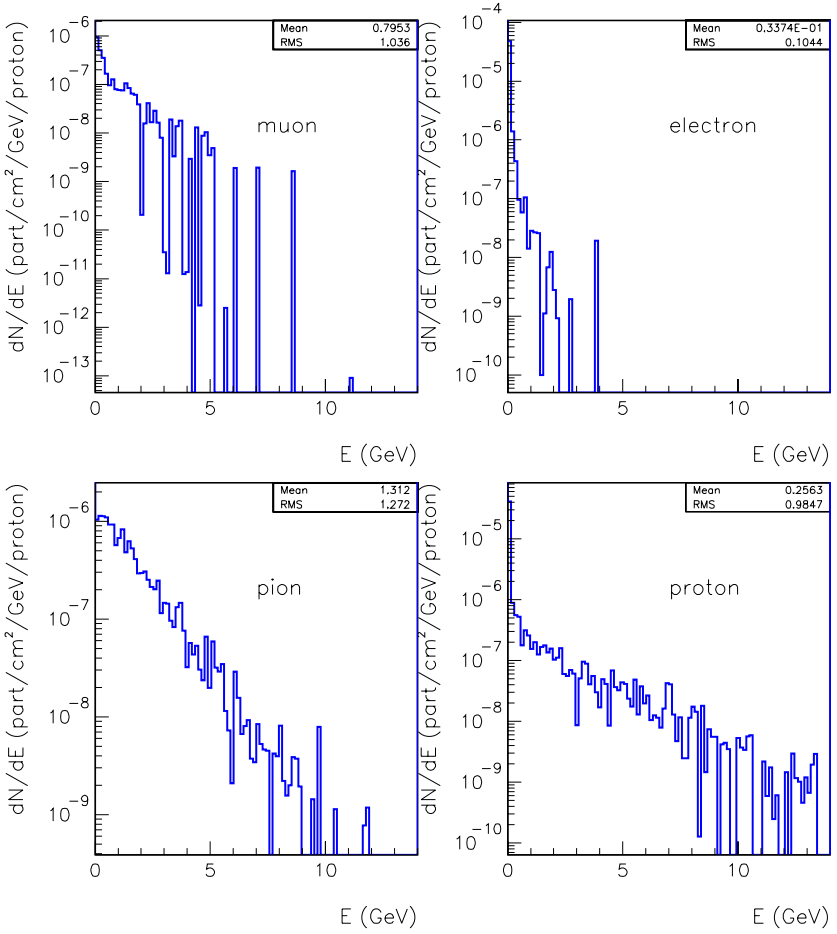


Time distribution of charged particles at 90 degree

Energy spectra (detector 3 – 10 degree)

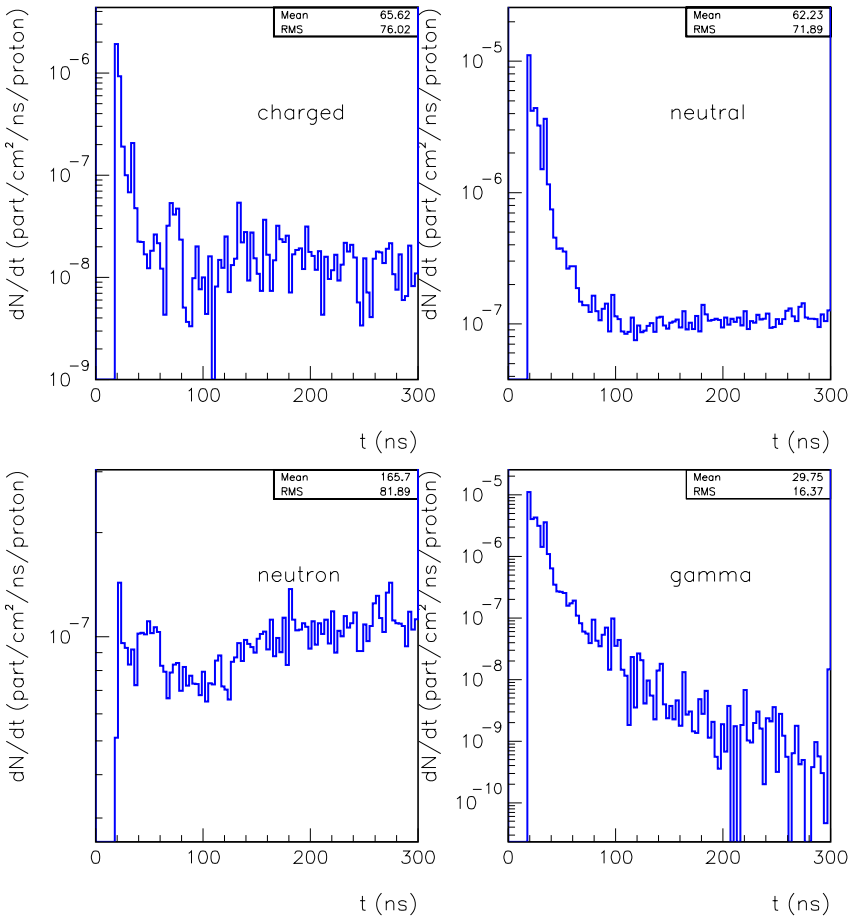


Energy spectra at 10 degree

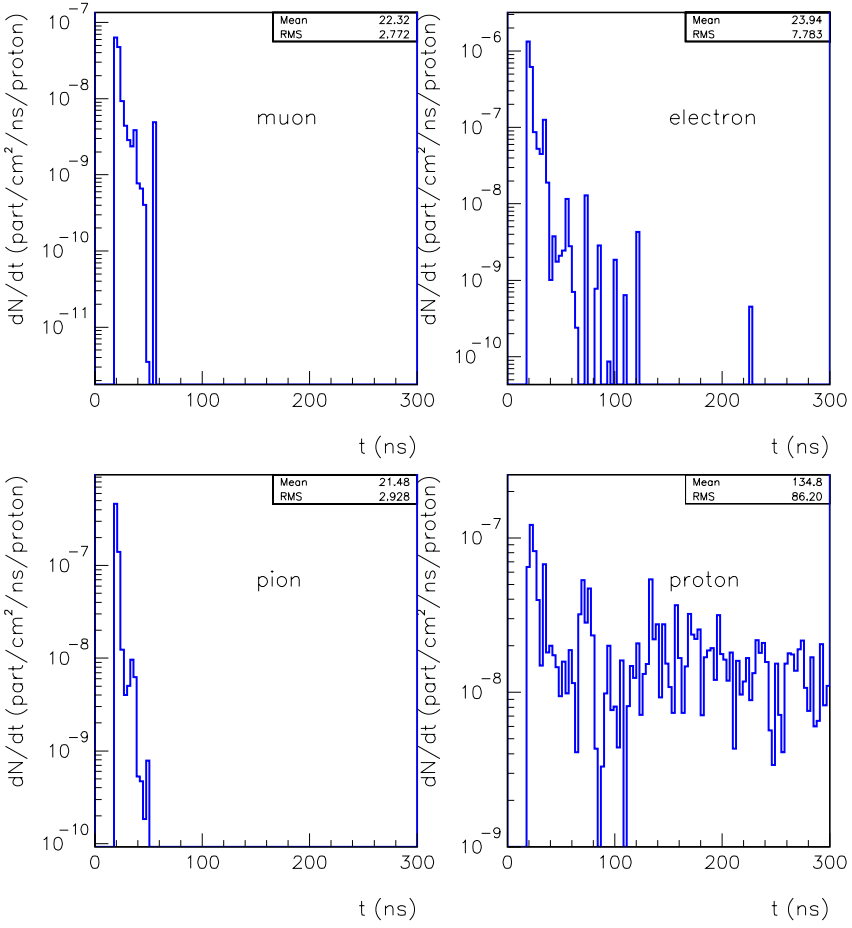


Energy spectra of charged particles at 10 degree

Time distribution (detector 3 – 10 degree)

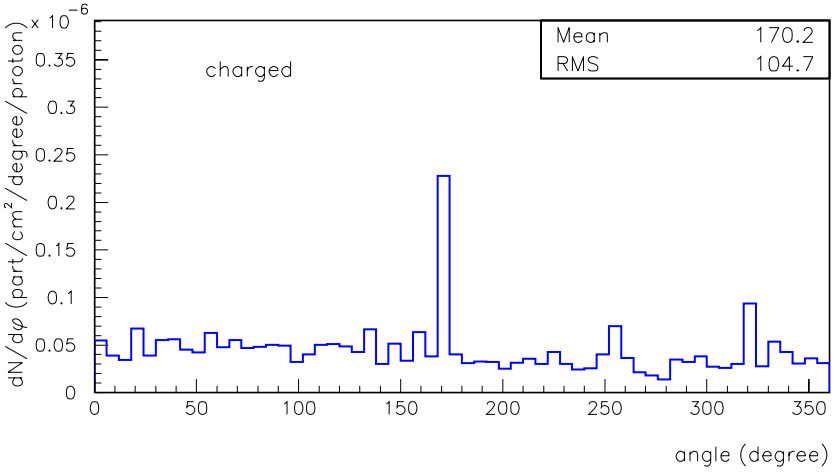


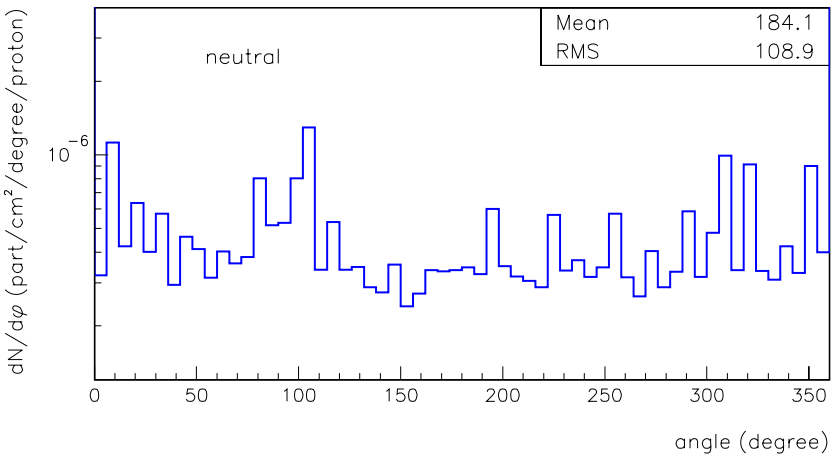
Time distributions at 10 degree



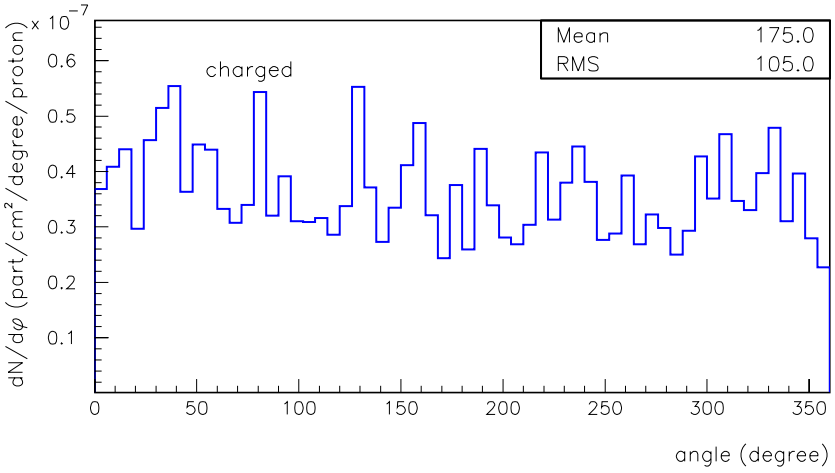
Time distribution of charged particles at 10 degree

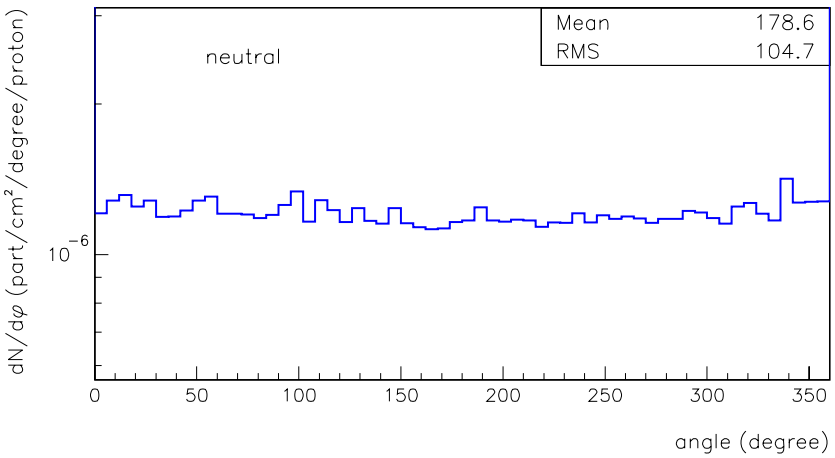
Angular distributions





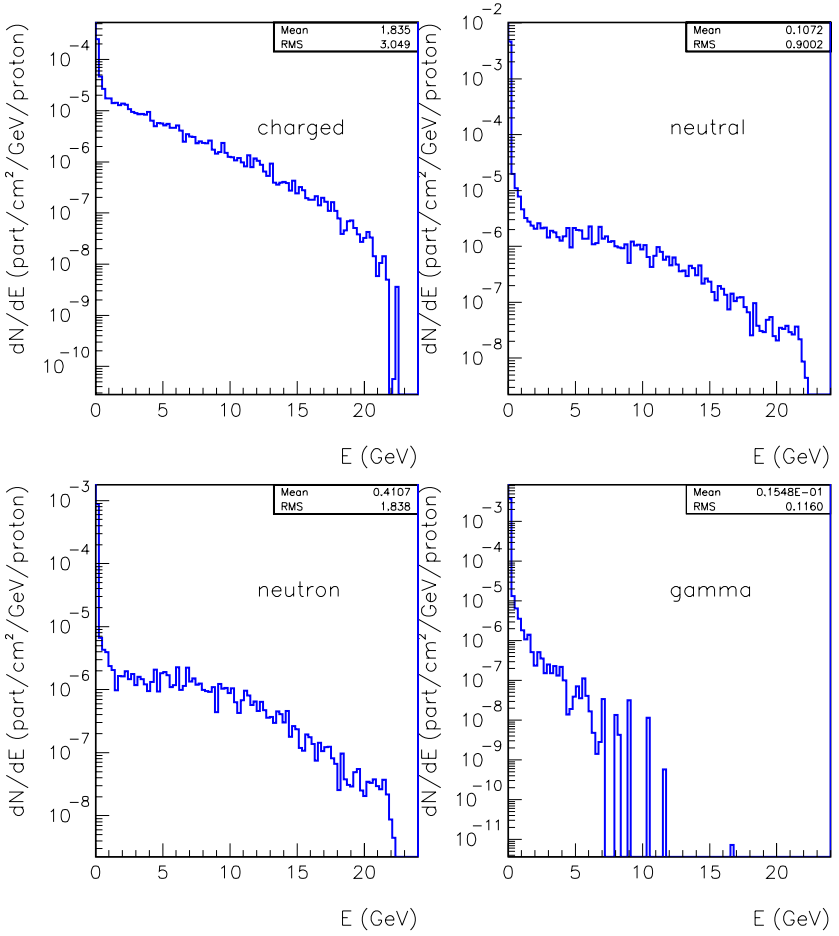
Angular distributions at 10 degree



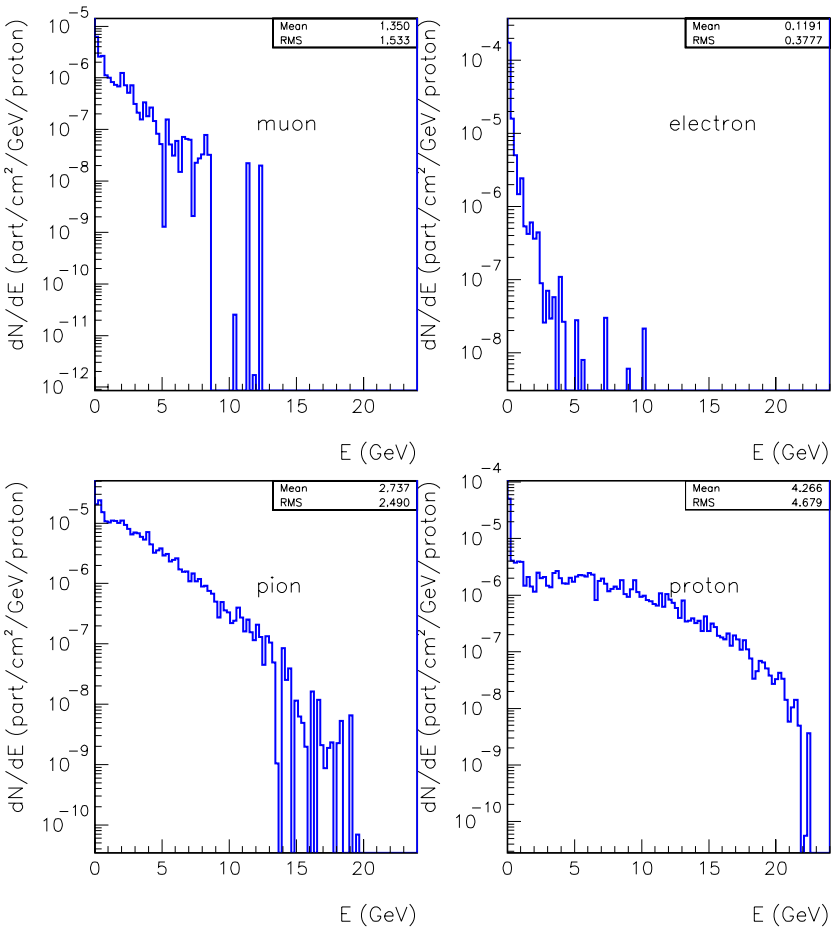


Angular distributions at 90 degree

Energy spectra (detector 4 – 0 degree)

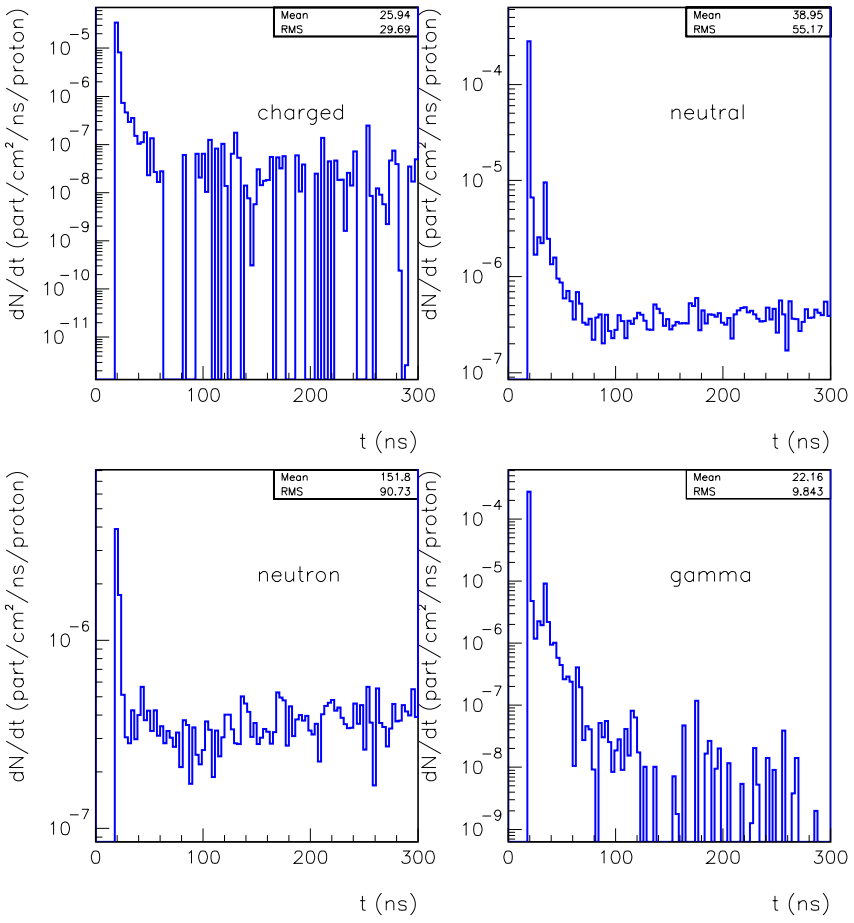


Energy spectra at 0 degree (detector 4)

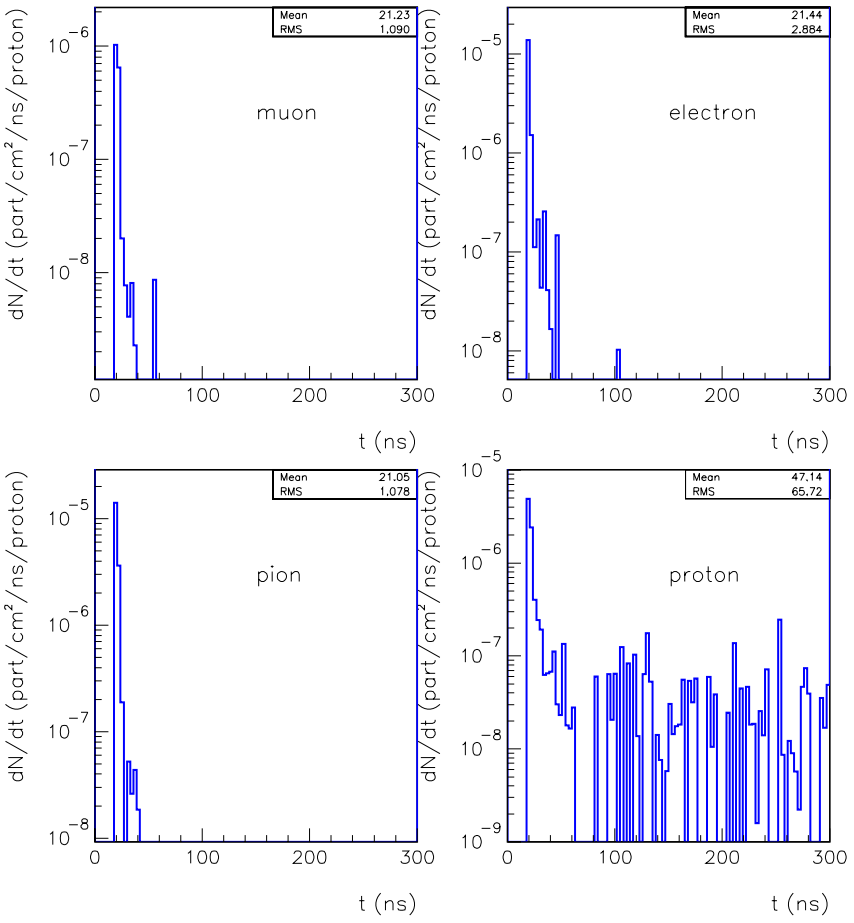


Energy spectra of charged particles at 0 degree (detector 4)

Time distributions (detector 4 – 0 degree)

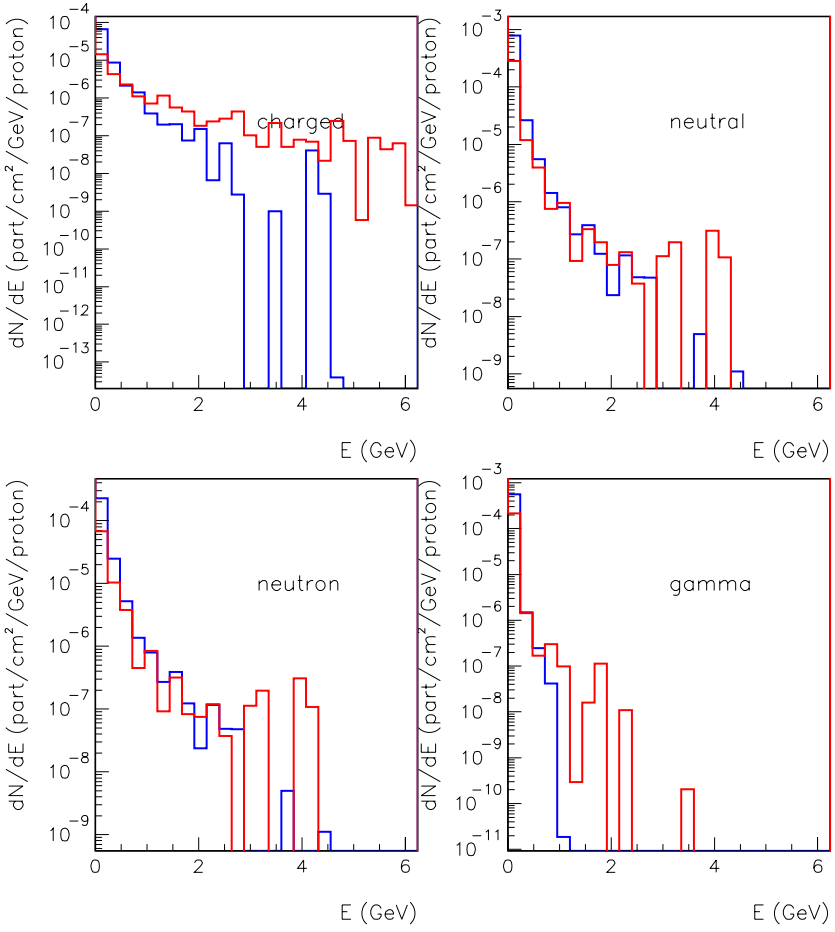


Time distribution at 0 degree (detector 4)

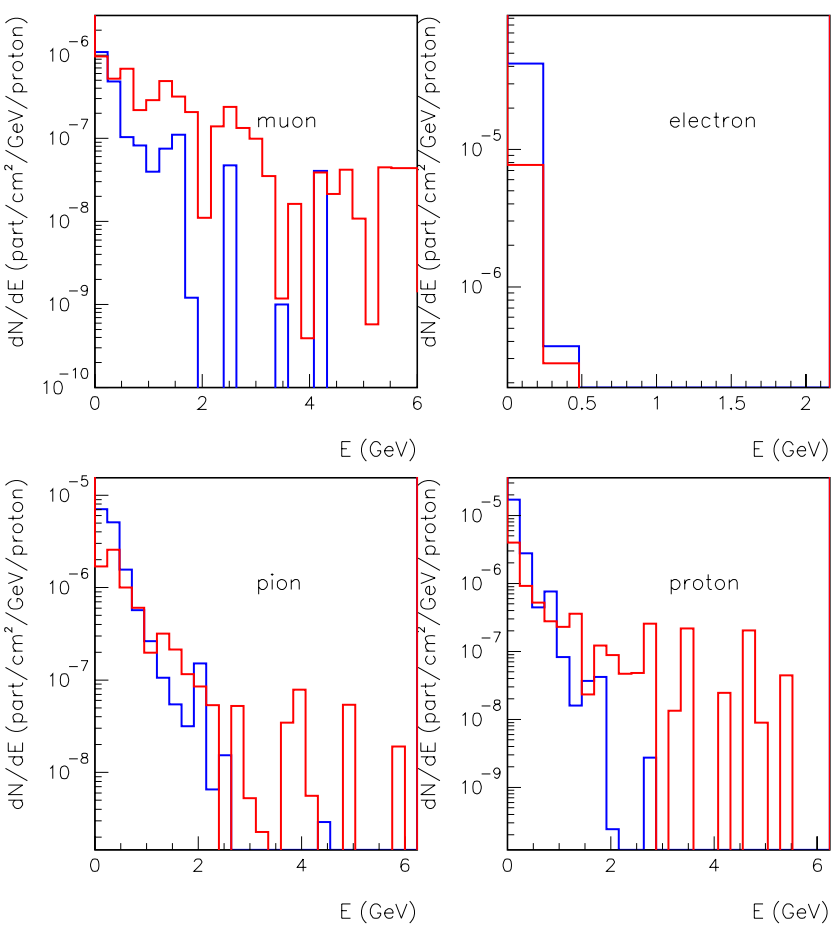


Time distribution of charged particles at 0 degree (detector 4)

Energy spectra (detector 1 – 0 degree):
red line – Hg target
blue line – air target

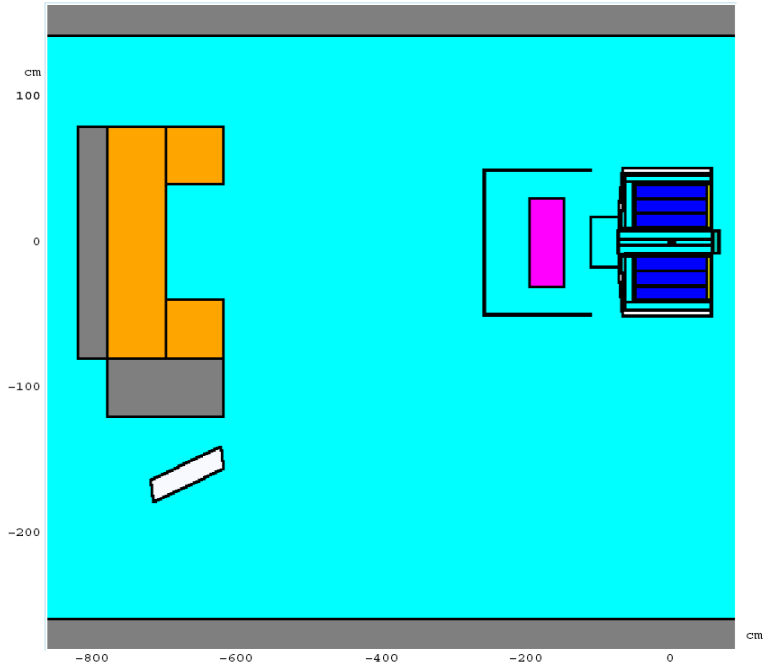


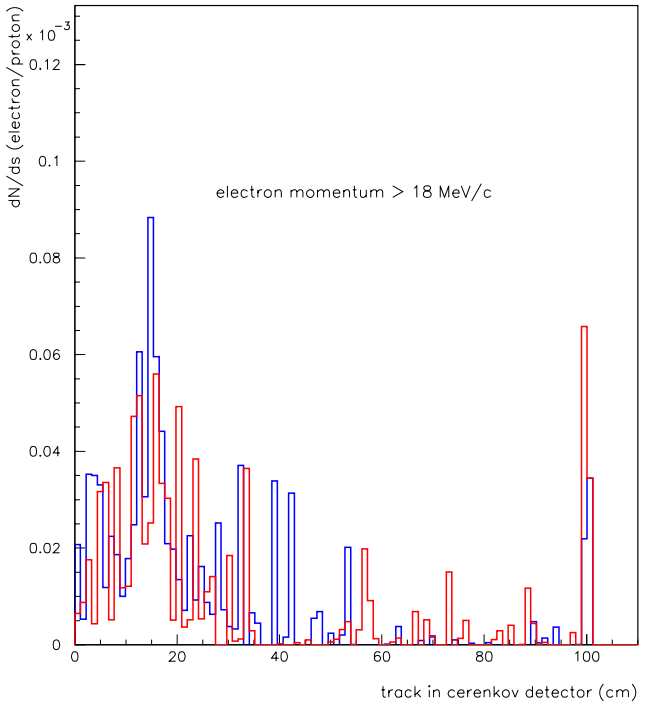
Energy spectra at 0 degree



Energy spectra of charged particles at 0 degree (detector 1)

Cerenkov detector 100 cm long, 7.9 cm radius.
Number of charged pions (p>5 GeV/c) – 1.6 10^{-6} per proton,
number of electrons with same β (p>18 MeV/c) - 9. 10^{-4} per proton,
1 cm Pb shield installed before detector - 1. 10^{-3} per proton.
Electron track inside detector > 90 cm - 1.1 10^{-4} per proton,
1 cm Pb shield installed before detector - 6.2 10^{-5} per proton.





Blue line – 1 cm Pb before detector, red line – no Pb.