

**Positron yield from 500 um Al target irradiated by bremsstrahlung photons
w/ the end point energy 44 MeV.**

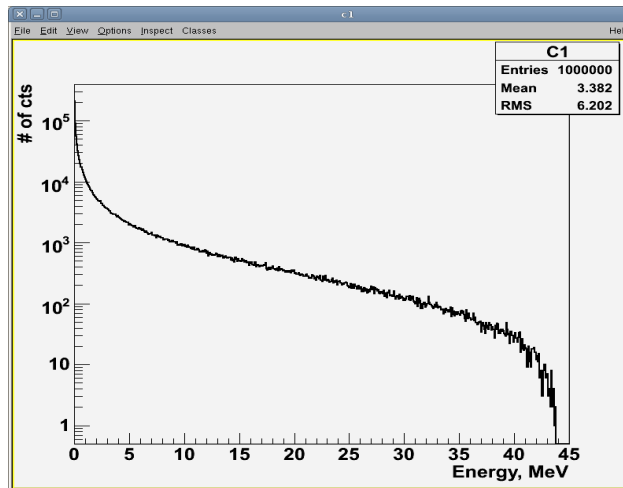


Fig. 1. Bremsstrahlung spectrum sampled via G4.

The total number of photons which hit the converter was $11.2 \cdot 10^7$. This number corresponds to the calculated photon yield (γ/sec) from 0.5 mil Ti radiator corrected for the effect of the collimator area.

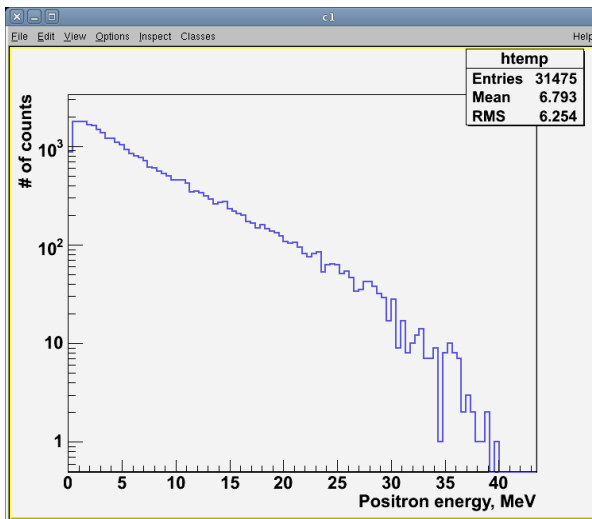


Fig. 2. Energy spectrum of the positrons going out of the converter.

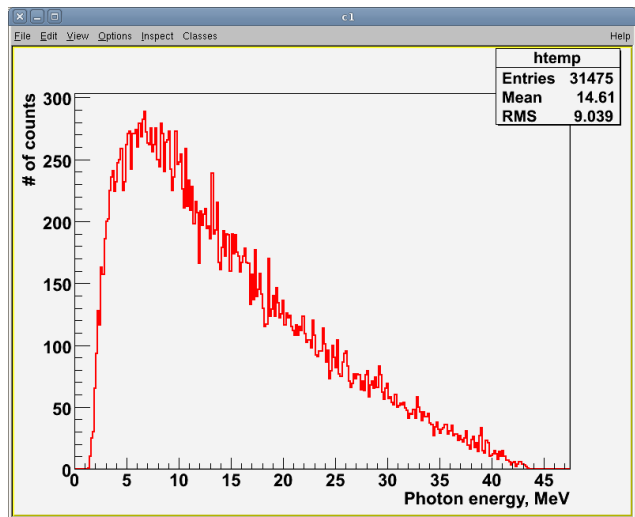


Fig. 3. Photon spectrum. The photons which produced positrons being able to escape the converter.

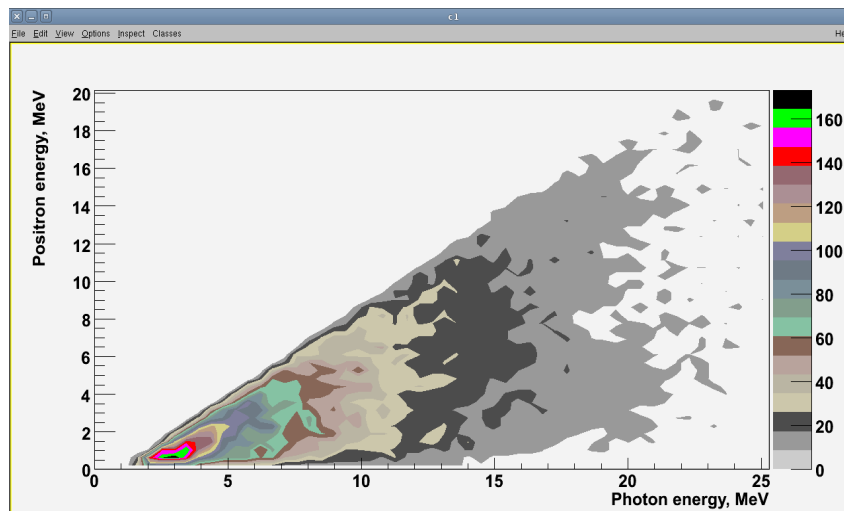
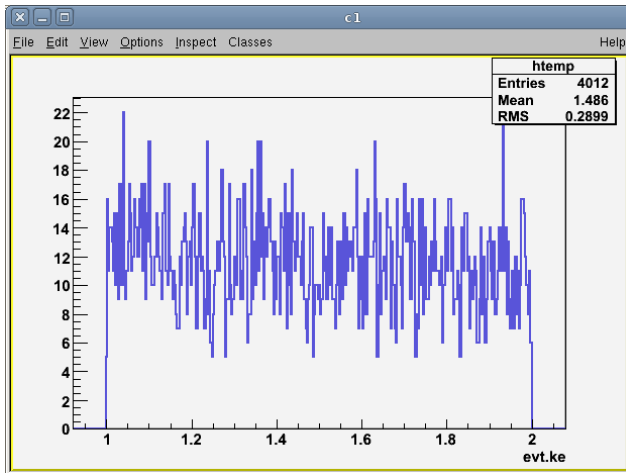


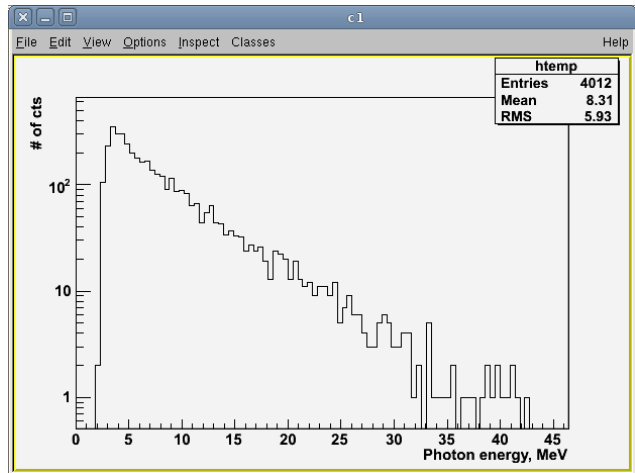
Fig. 4. Positron energy VS. photon energy.

Let's apply some cuts on the positron energy and see what the energy spectrum of the photons is.

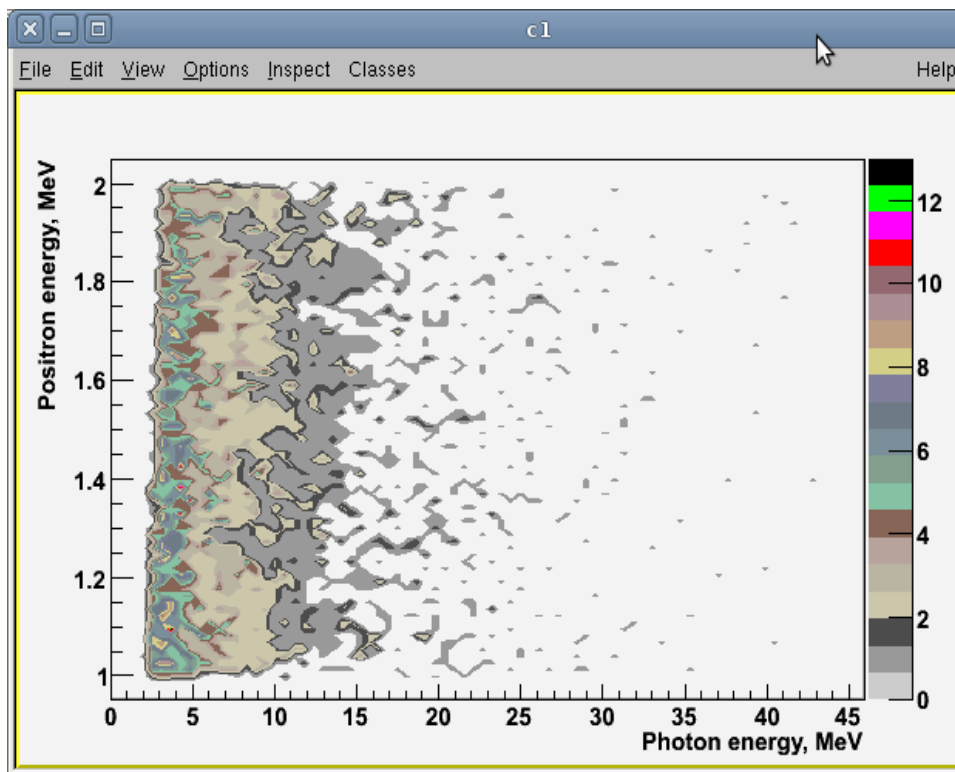
1-2 MeV cut.



1-2 MeV cut put on positron energy spectrum.



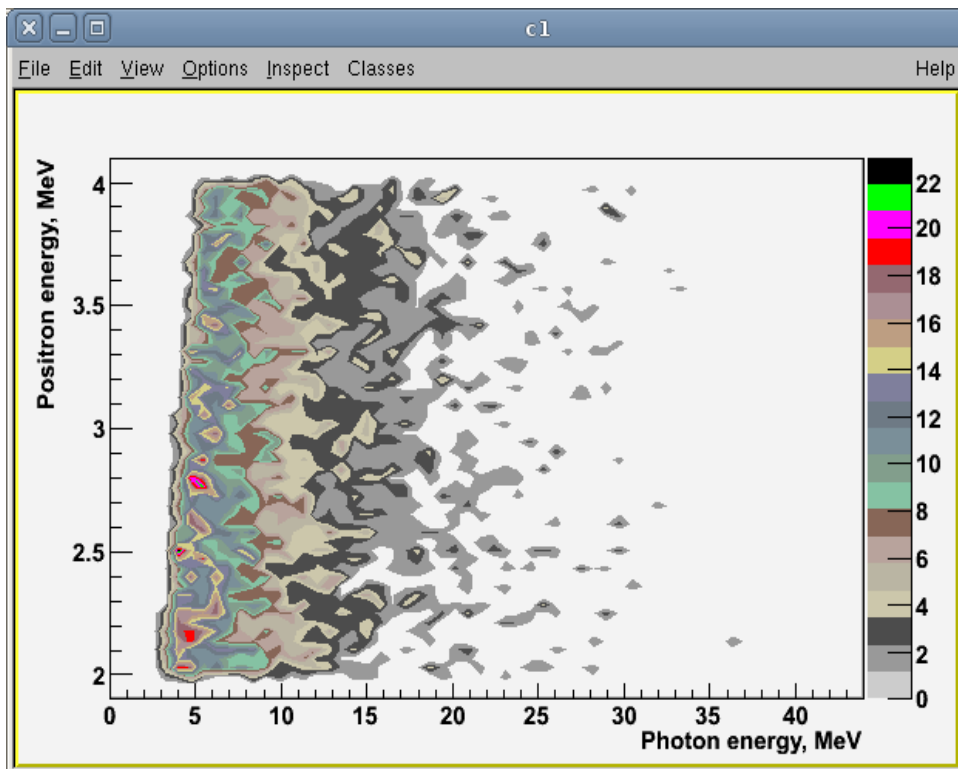
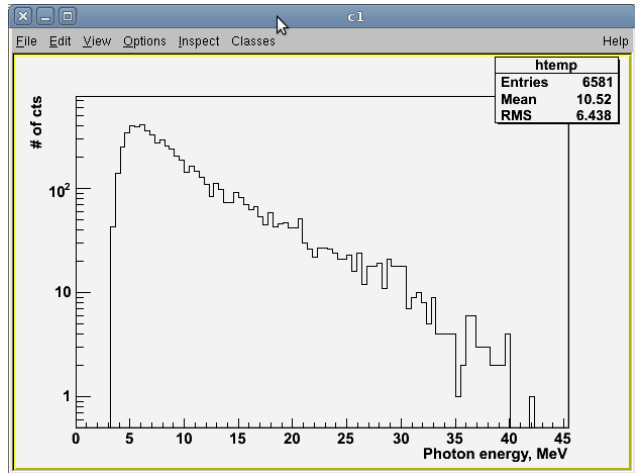
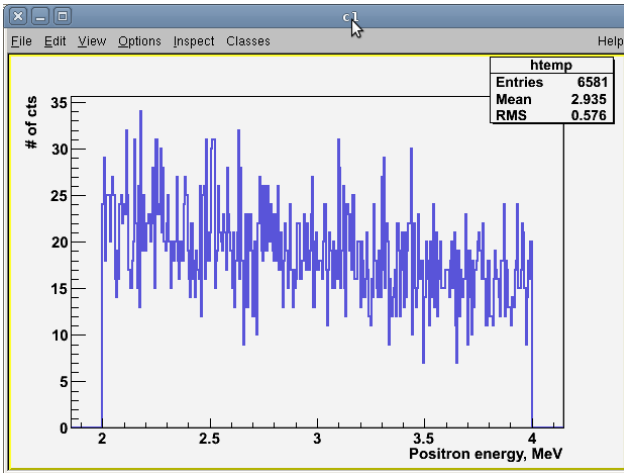
Corresponding photon energy spectrum.



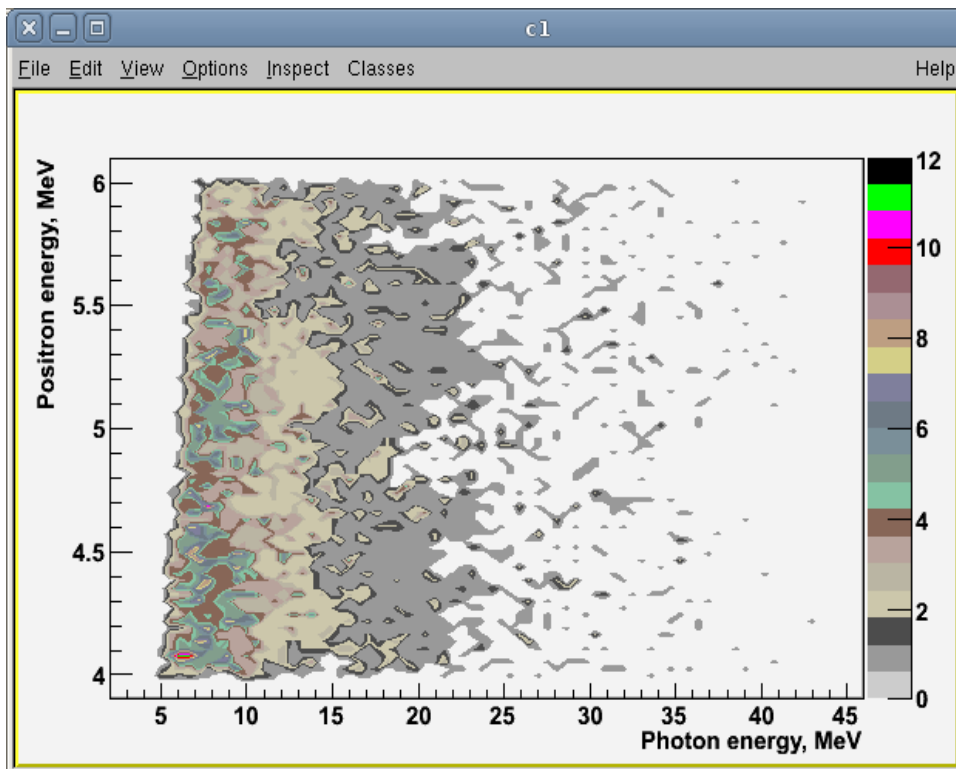
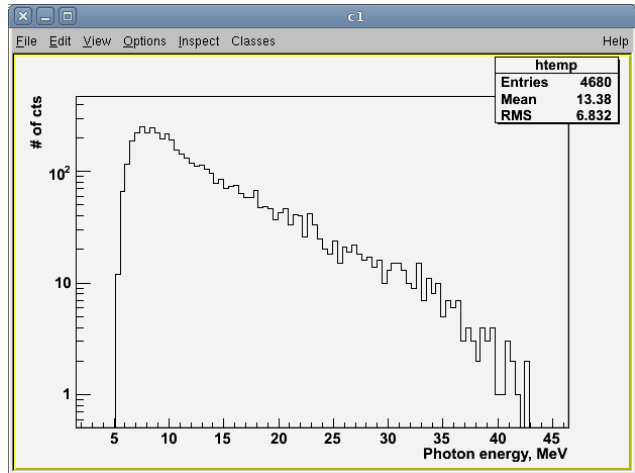
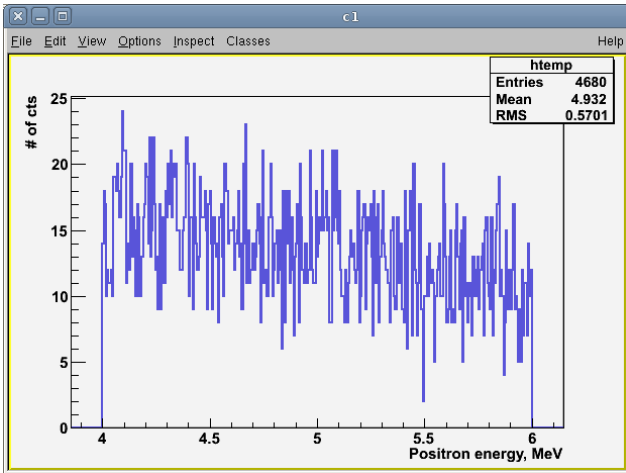
Positron energy VS. photon energy (cut applied).

The rest of the pictures is in the same order. The only difference is the value of cut applied to the positron energy spectrum.

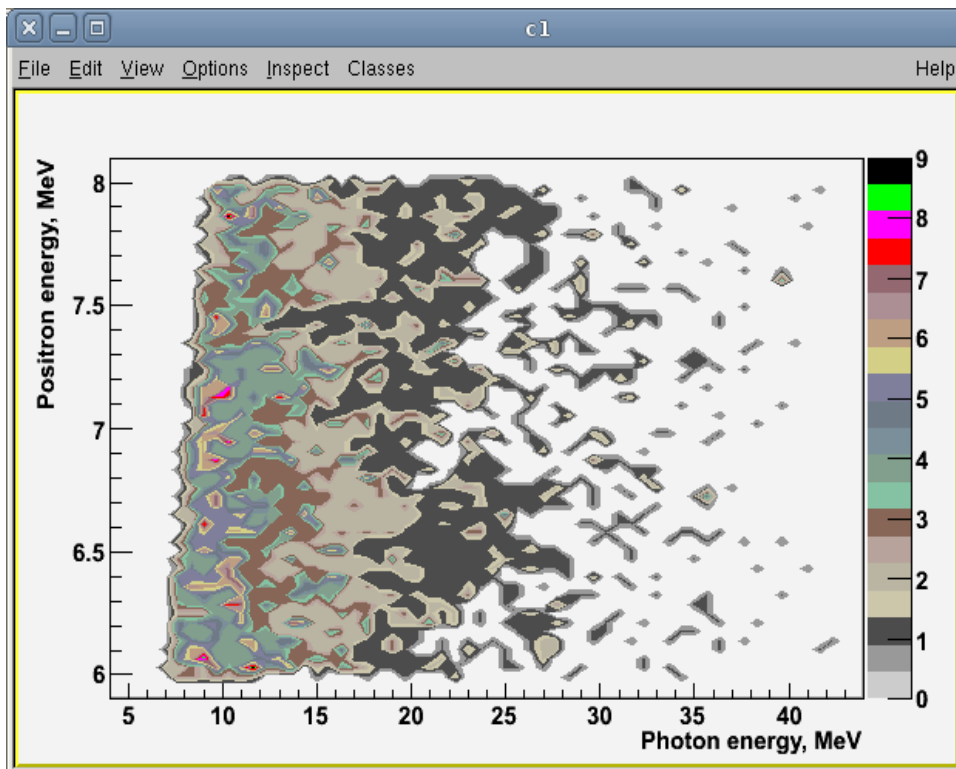
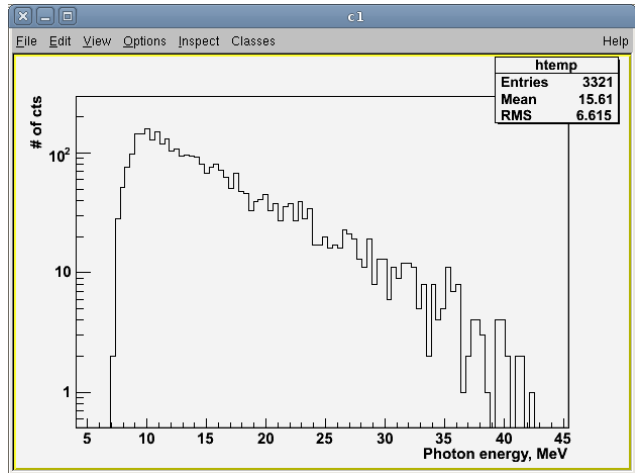
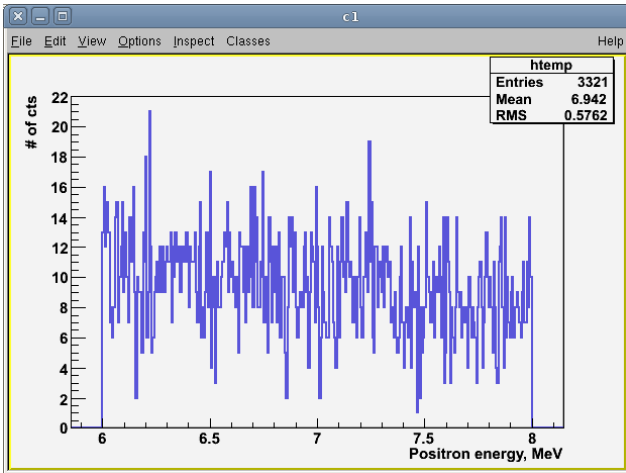
2-4 MeV cut.



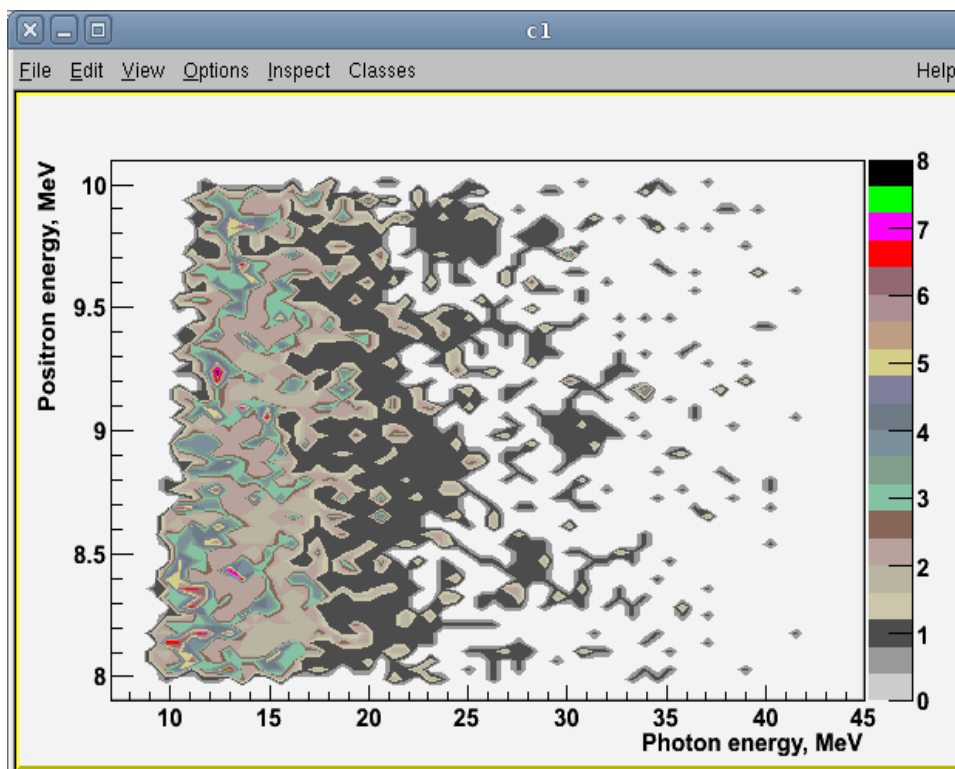
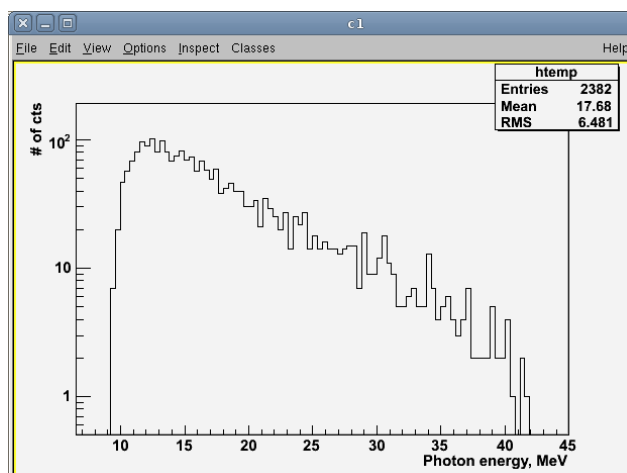
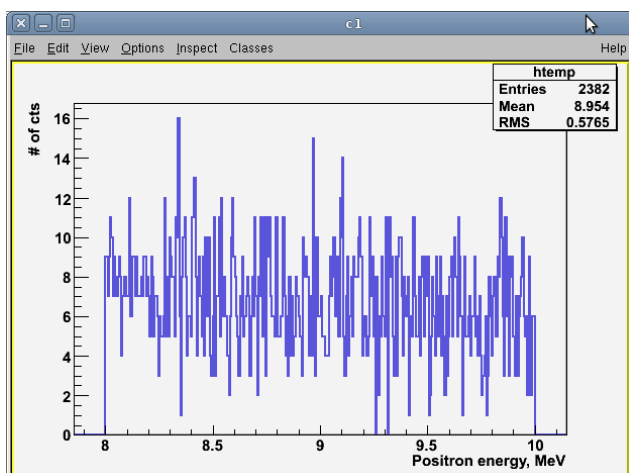
4-6 MeV cut.



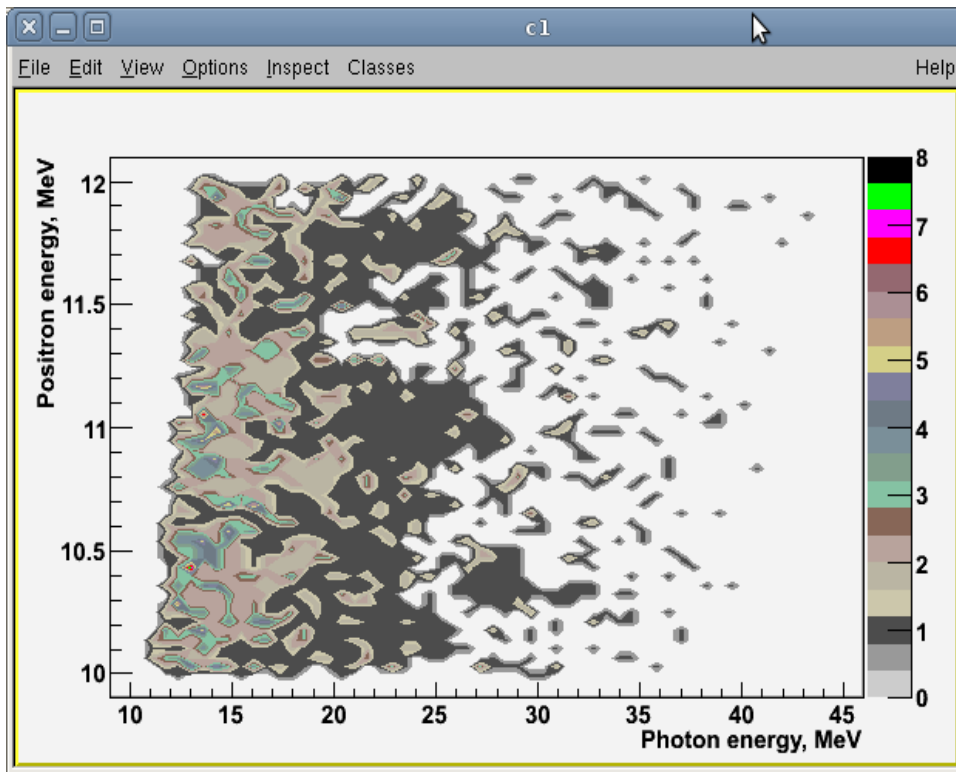
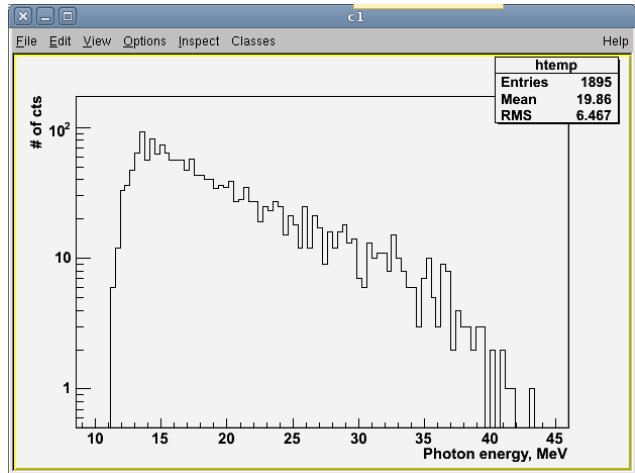
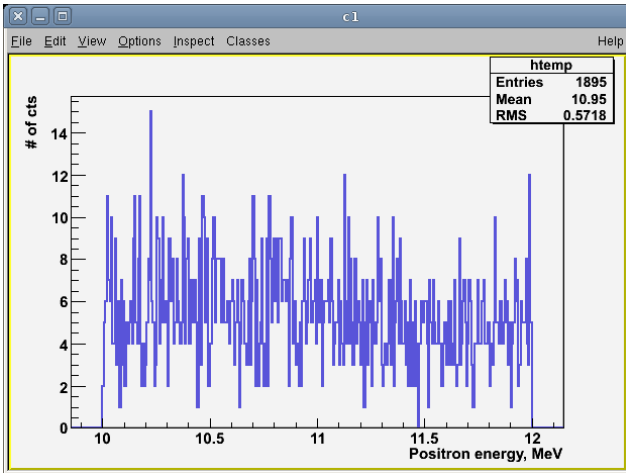
6-8 MeV cut.



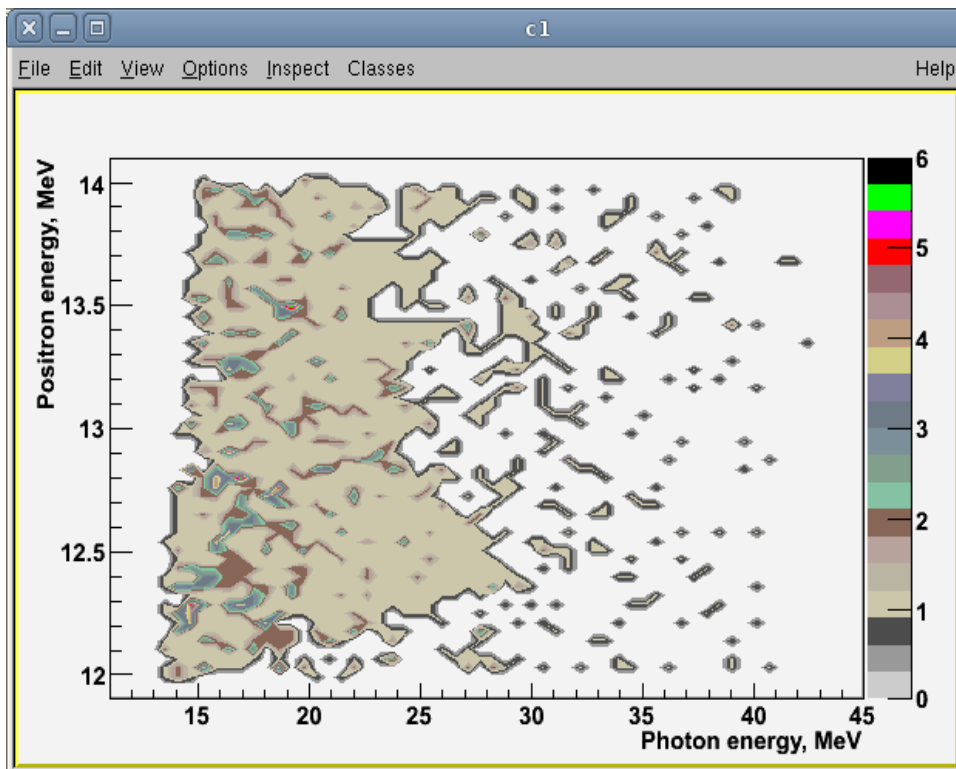
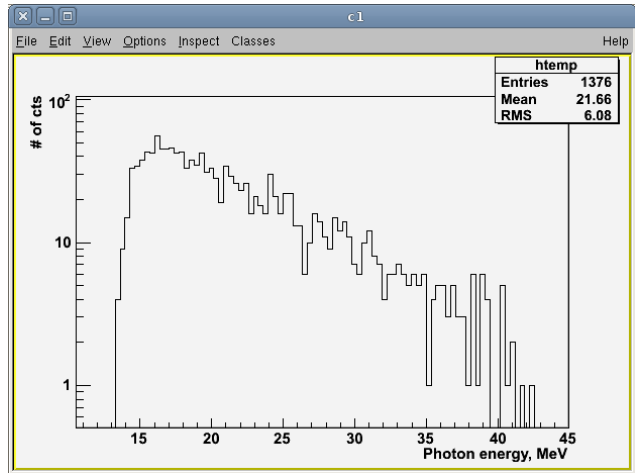
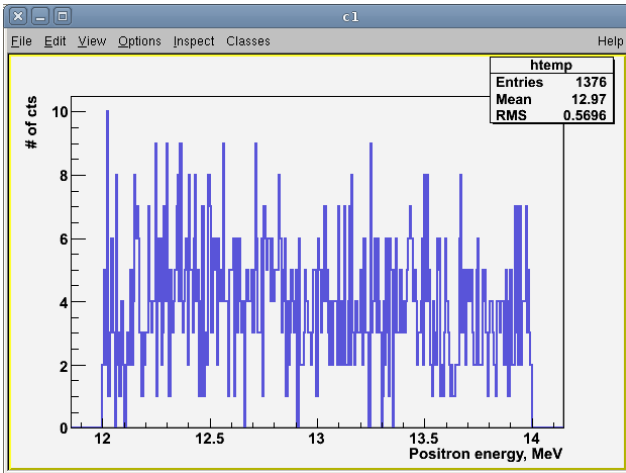
8-10 MeV cut.



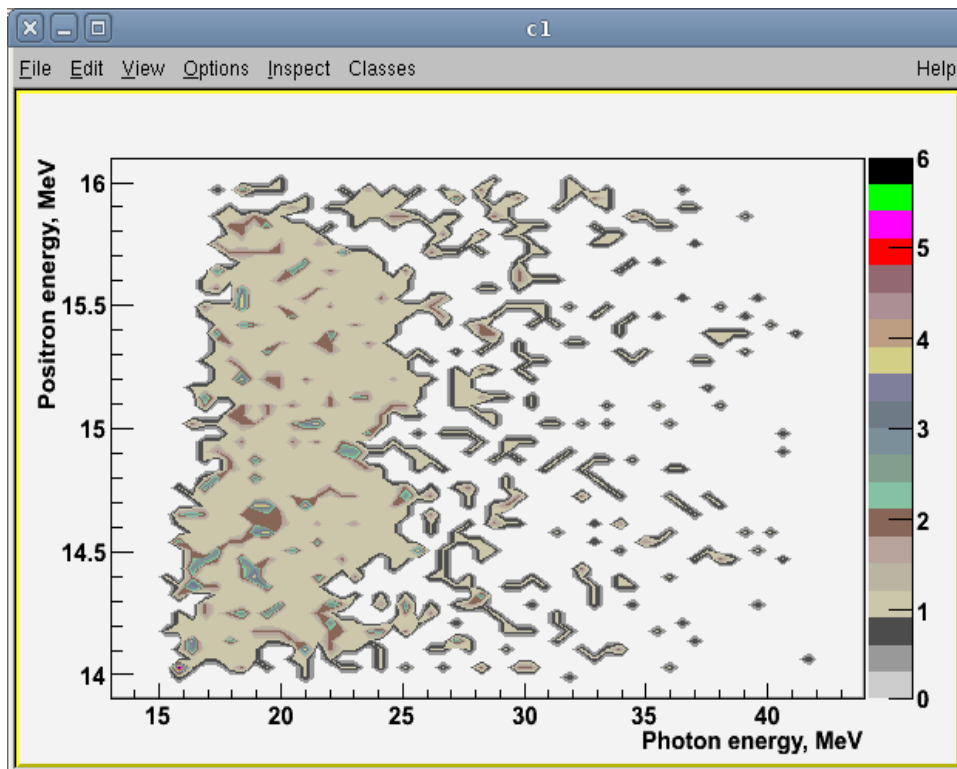
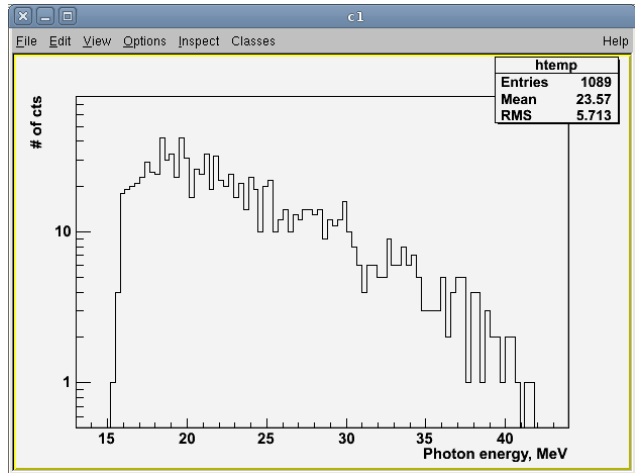
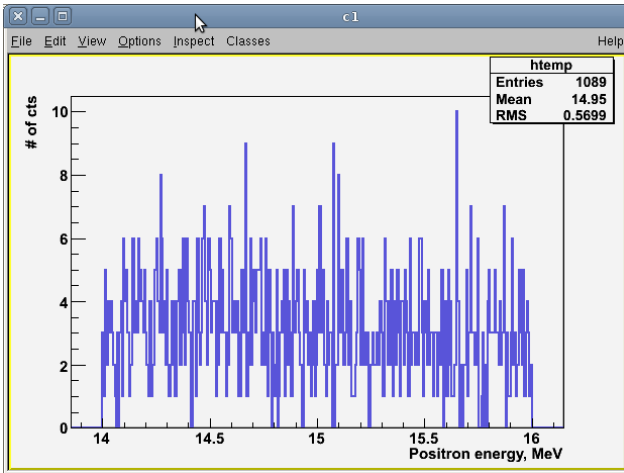
10-12 MeV cut.



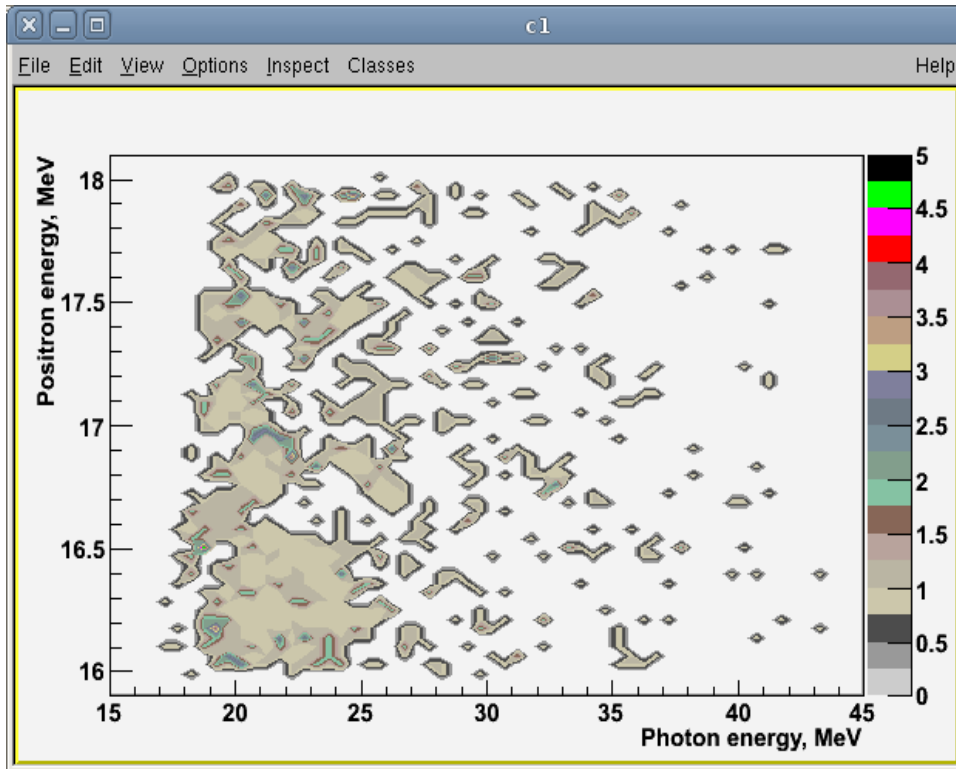
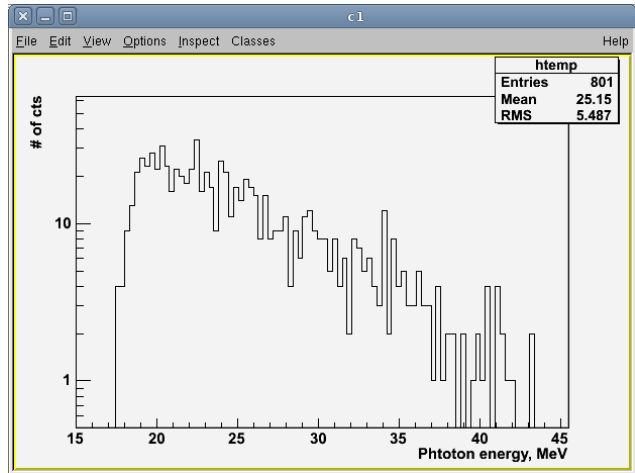
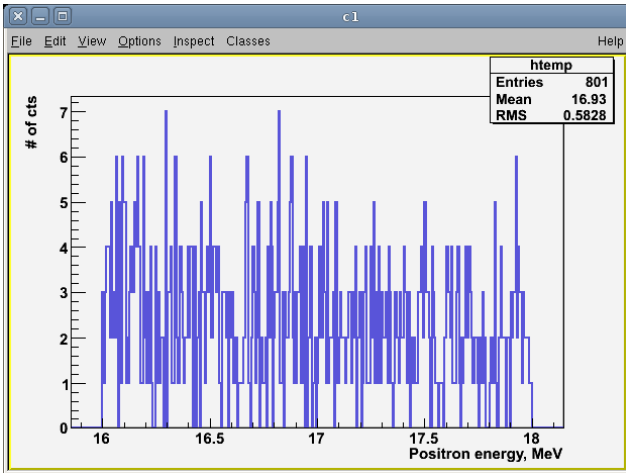
12-14 MeV cut.



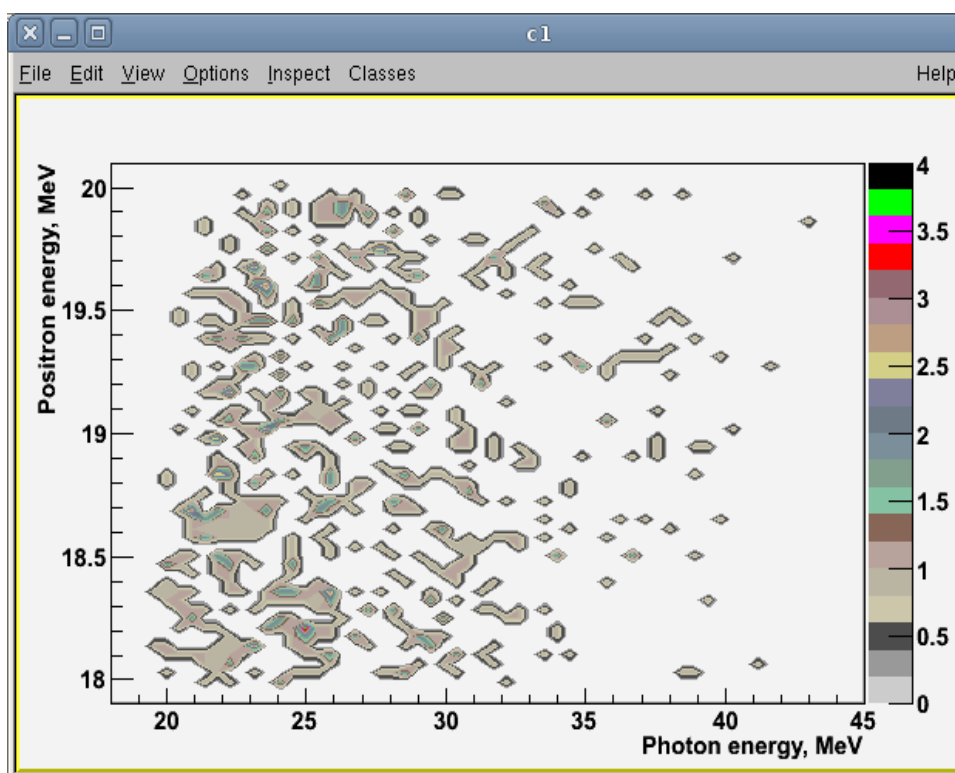
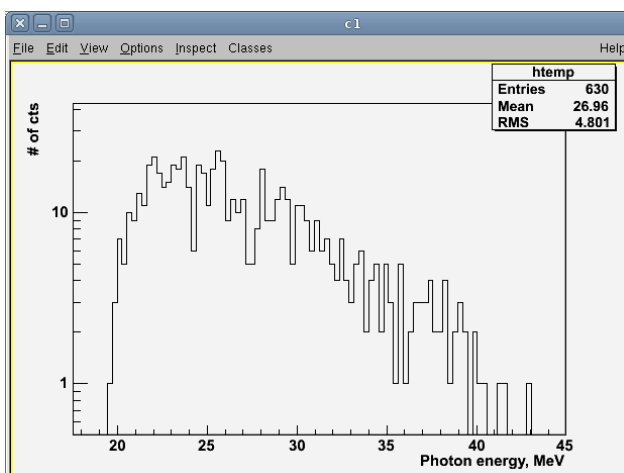
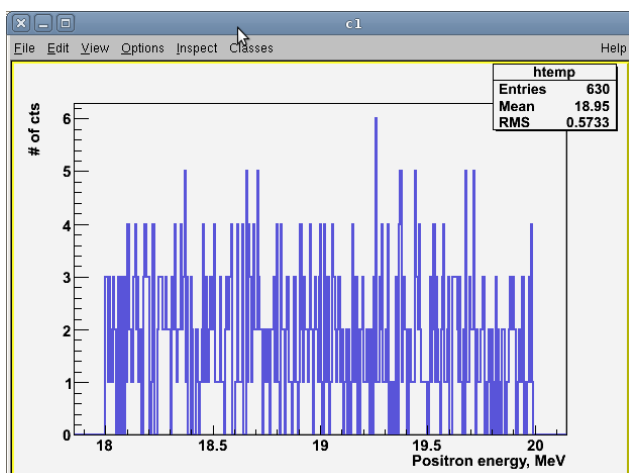
14-16 MeV cut.



16-18 MeV cut.



18-20 MeV cut.



Cuts applied to the positron energy spectrum were set up to 20 MeV. Our pair spectrometer can deflect to the side positrons w/ energies up to 11 MeV. Positrons w/ higher energies are going to be swept in the forward direction.