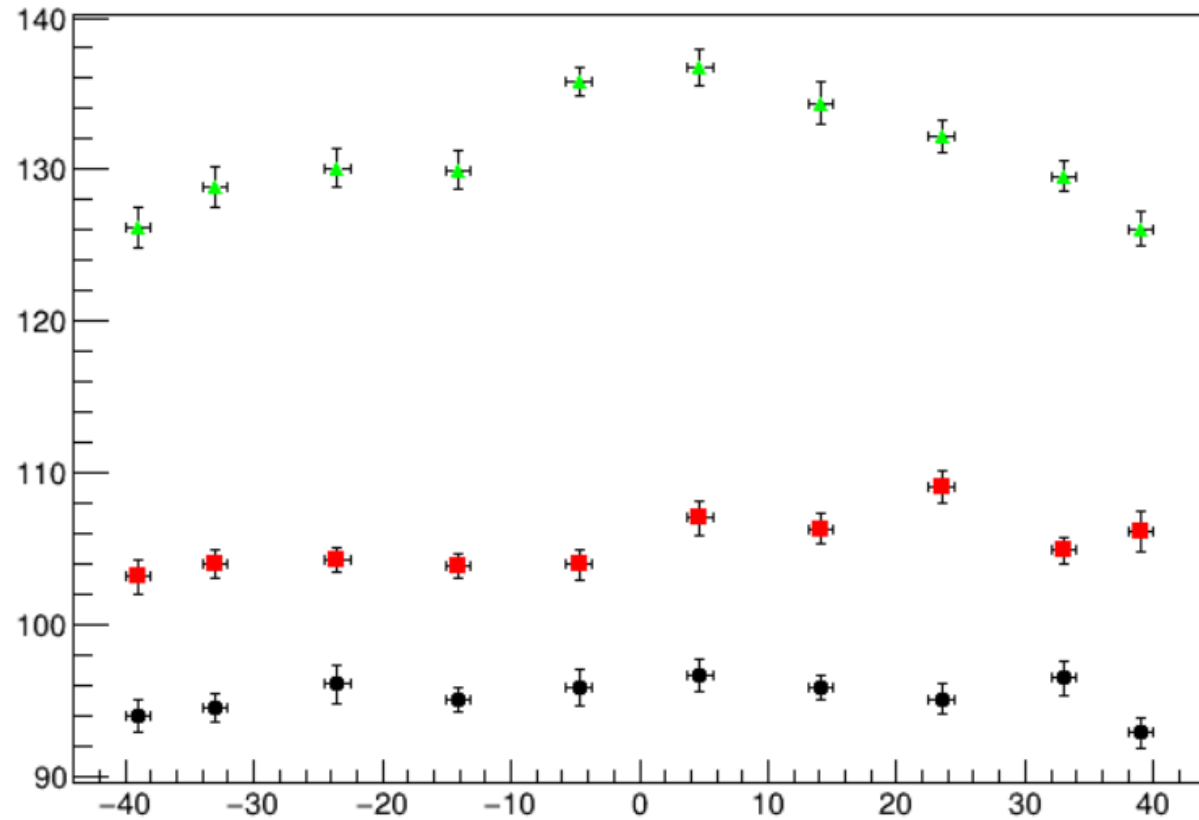
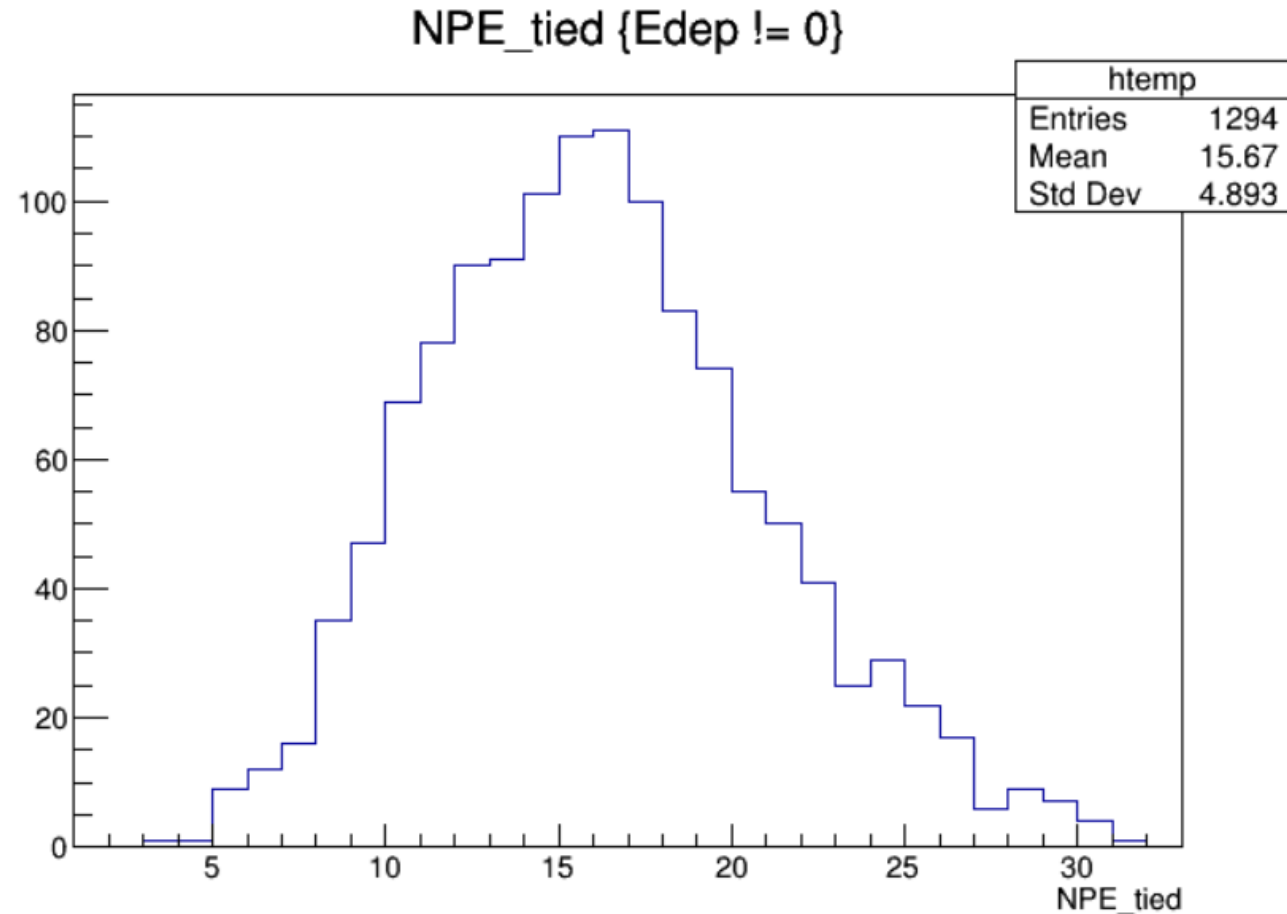


200506

Dependency in width direction(previous)



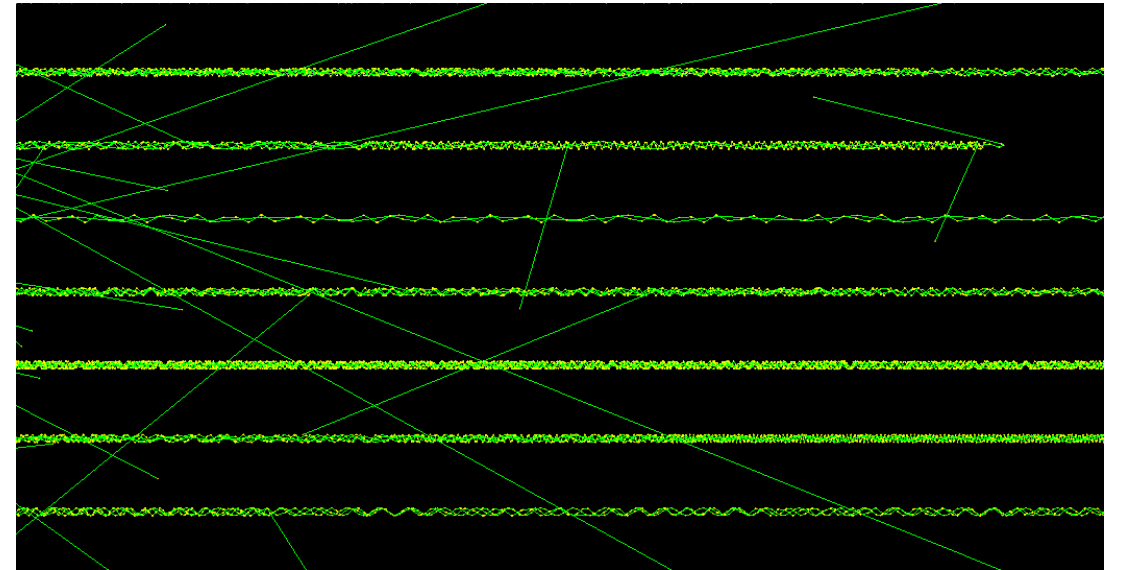
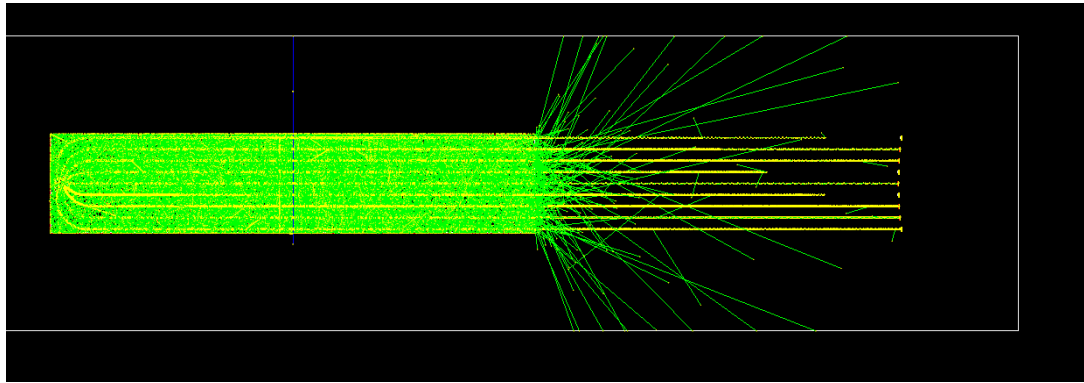
The number of photoelectron(directly)



The number of photoelectron is too small

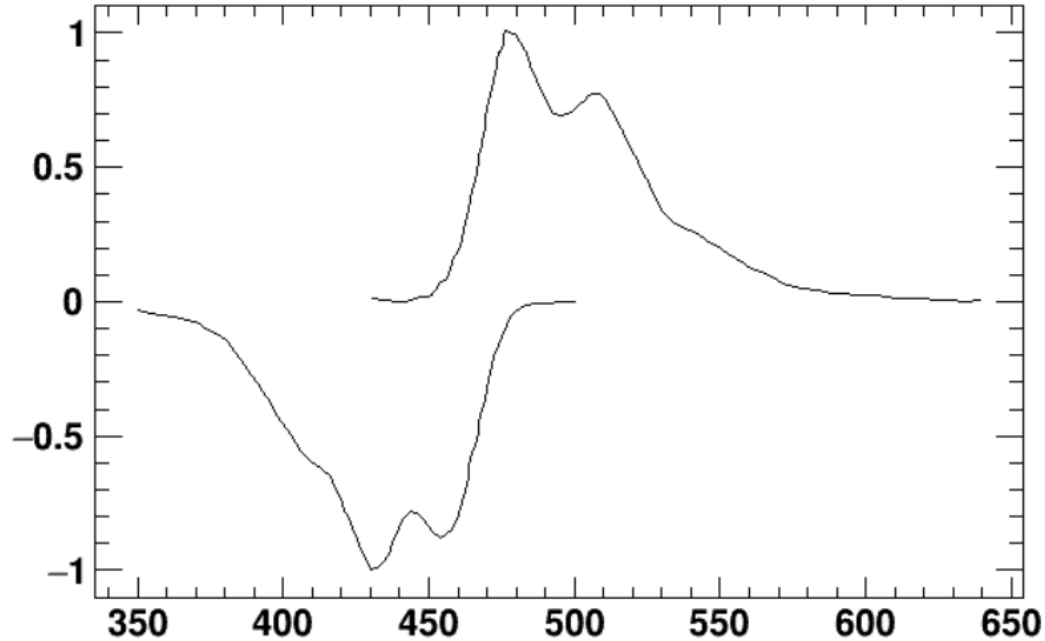
Problem

Pi+가 fiber를 통과하면서 Cerenkov로 광자를 만들어서 전파하는 것을 시뮬레이션 한 visualization



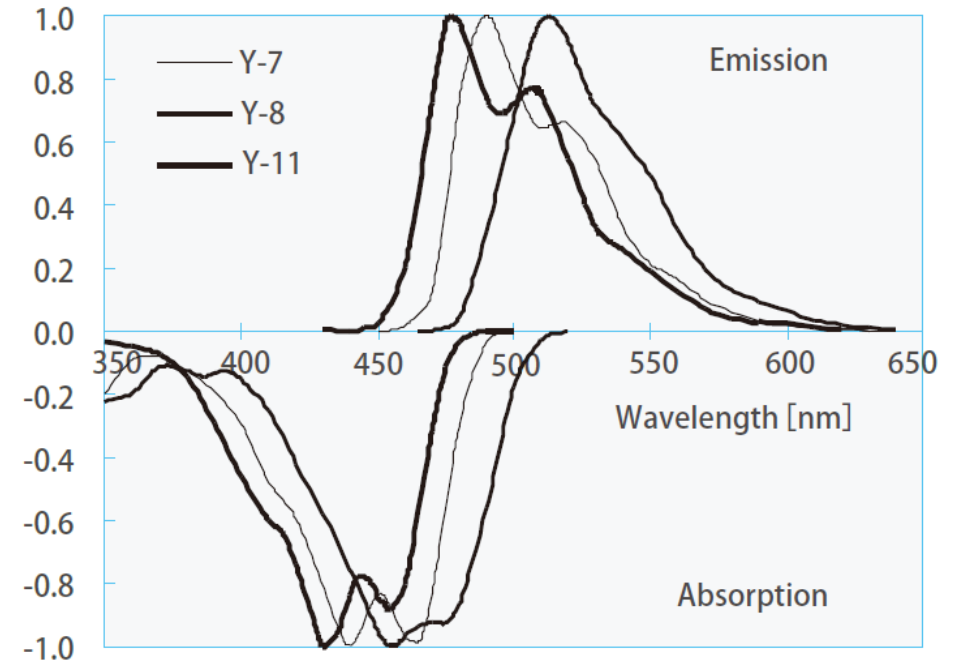
MPPC로 directly 들어가는 photon의 경우 aluminum mylar로 싸여있지 않은 fiber의 중간에서 재흡수 되고 재방출 되는데 이로 인해 the number of photoelectron의 수가 감소함을 확인할 수 있다.

Emission/absorption spectrum



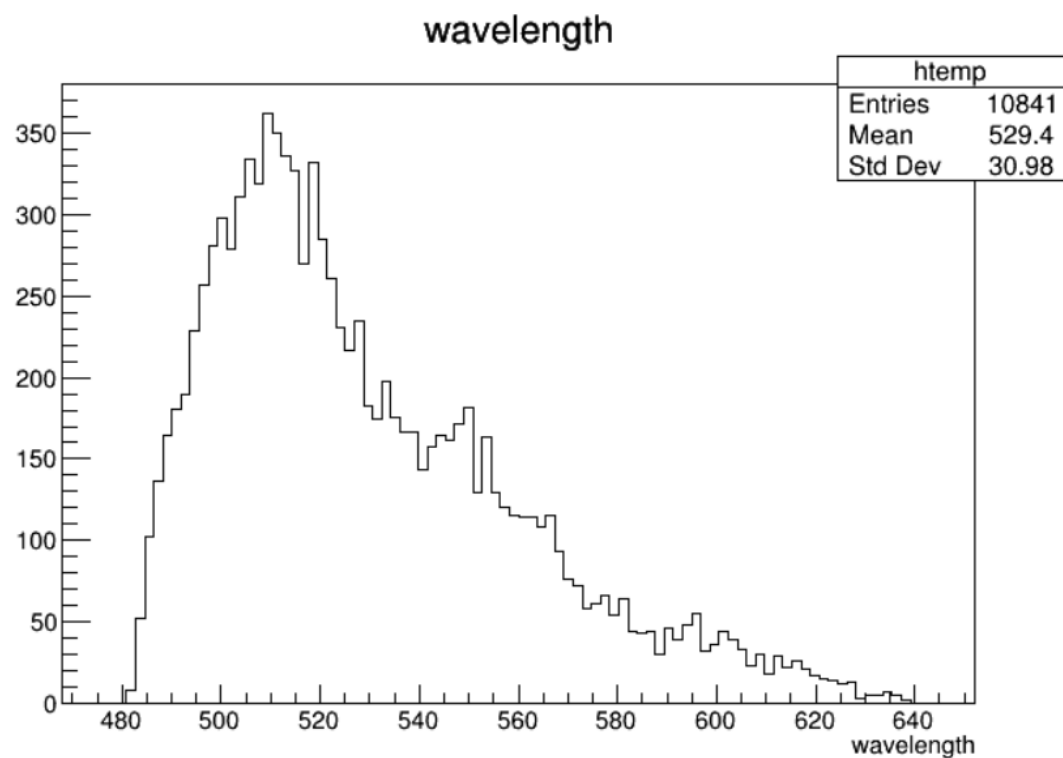
당시 사용한 spectrum

Y-7, Y-8, Y-11

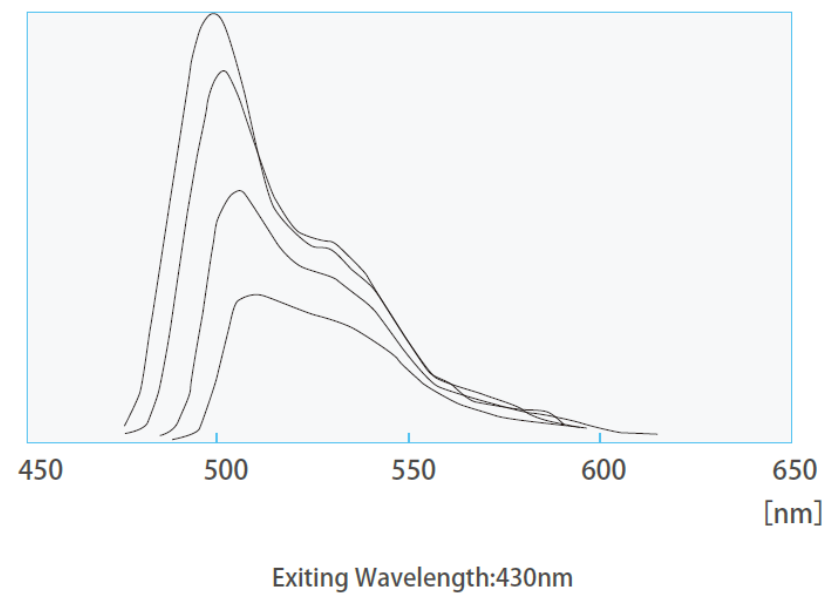


Kuraray사에서 제공한 spectrum

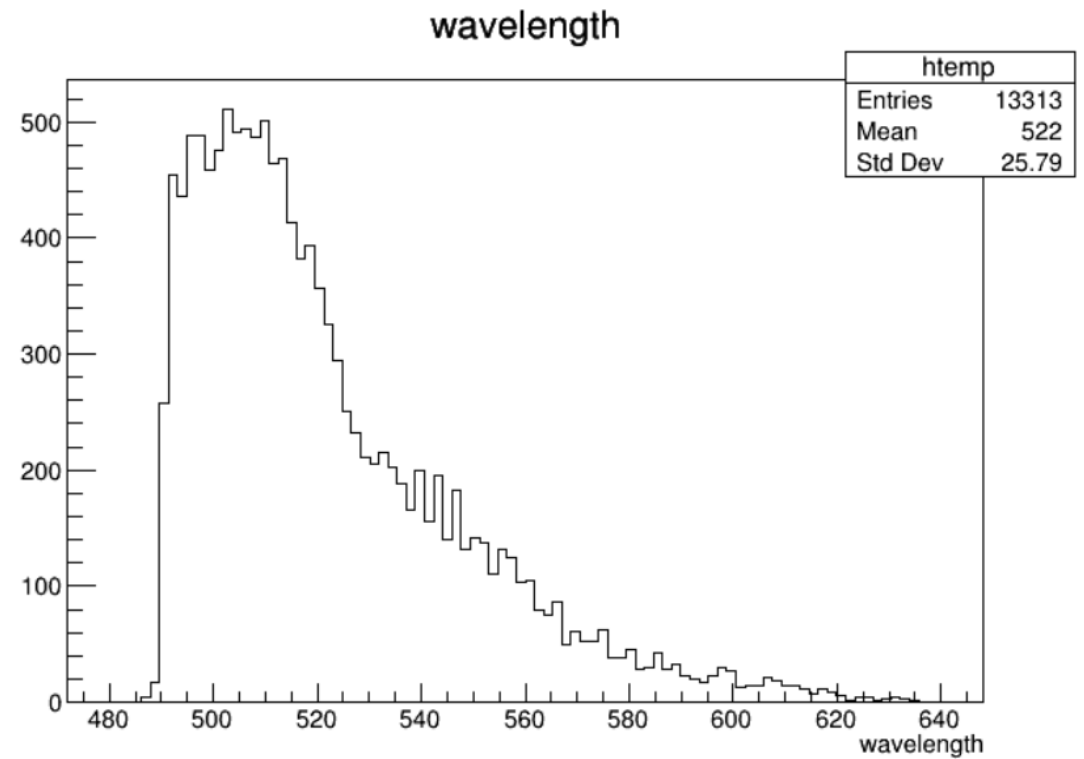
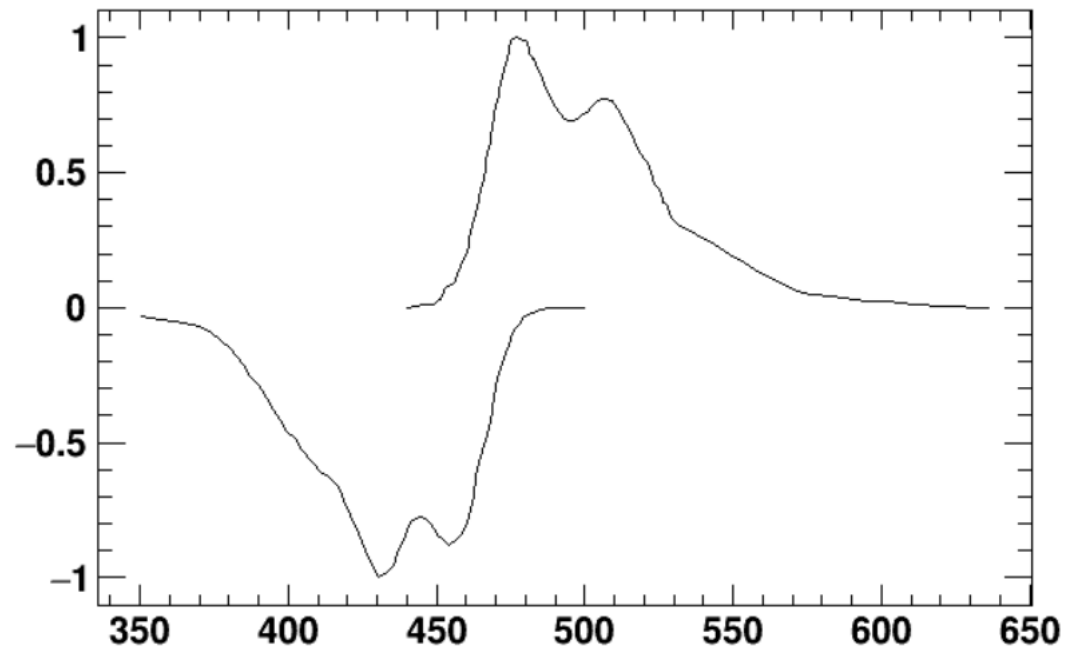
Spectrum at 10 cm away



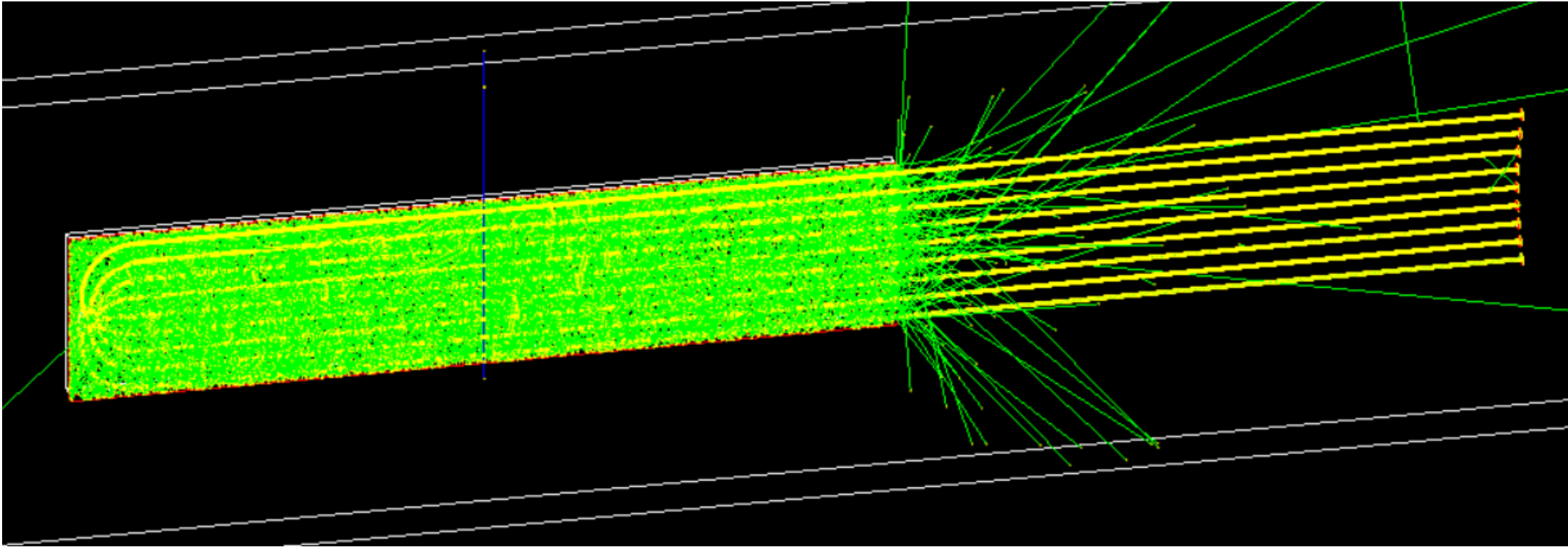
Y-11 (200)



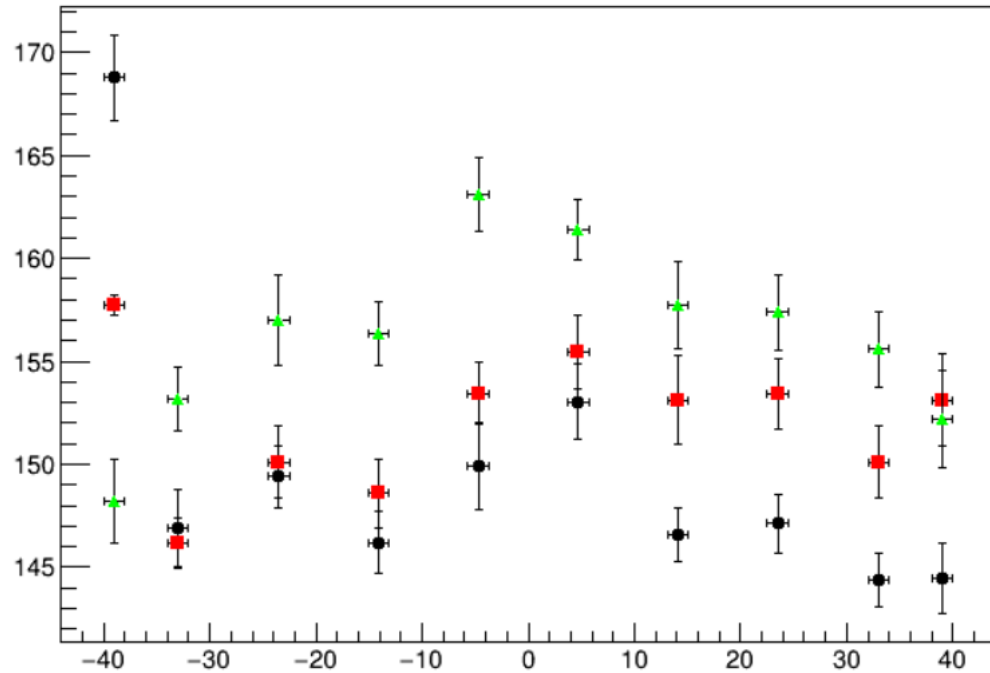
New emission/absorption spectrum



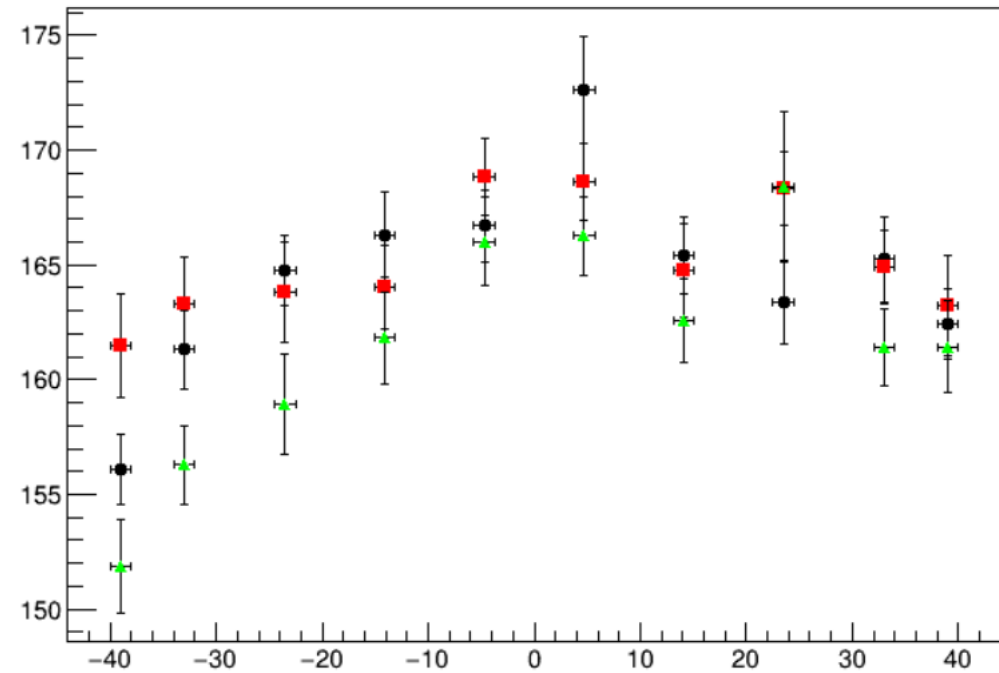
Visualization



Position dependency



MPPC with aluminum box



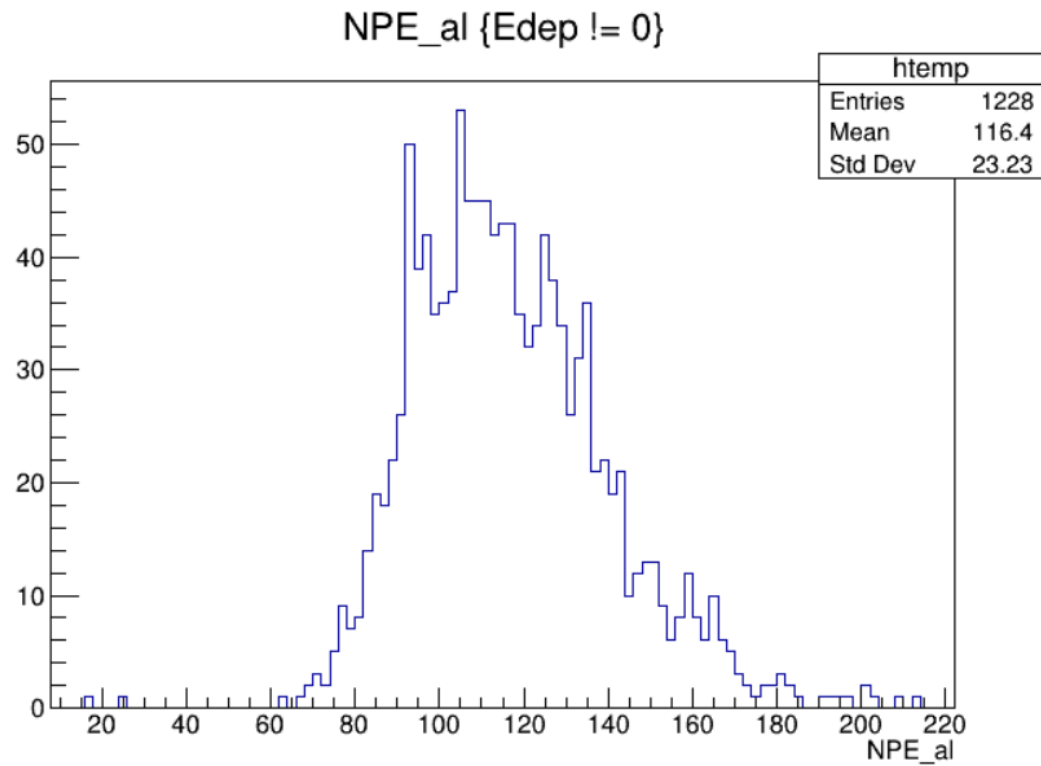
MPPC with directly incidence

Things to do

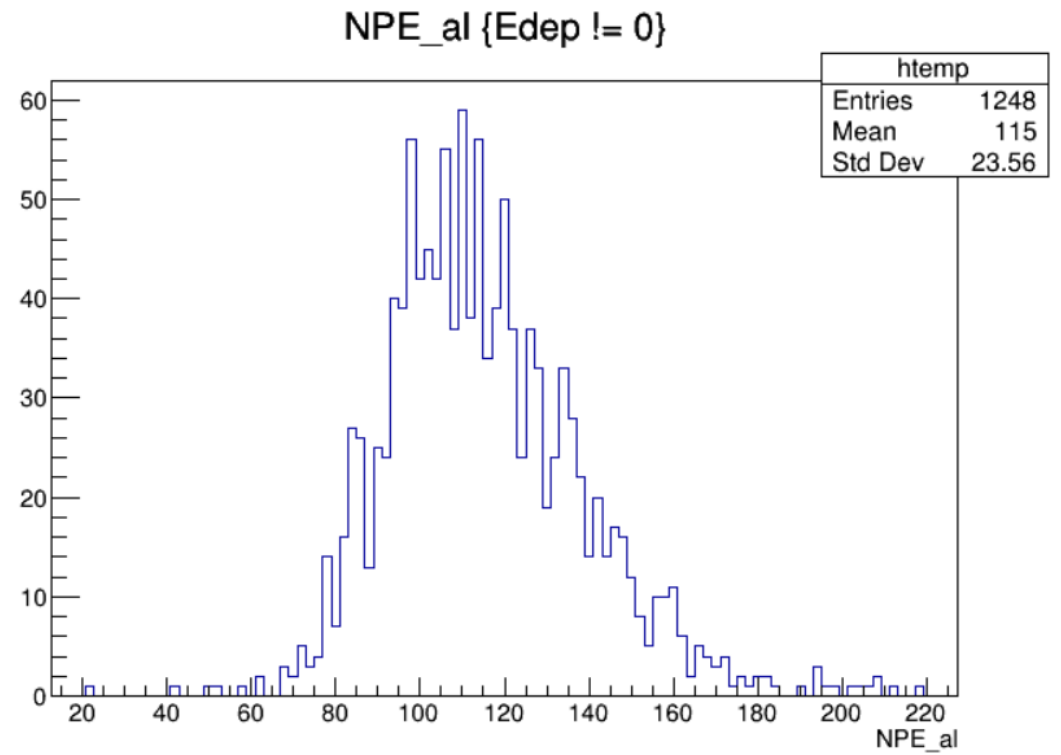
- 10 cm 떨어진 지점에서의 Spectrum에 맞는 Emission/Absorption spectrum 만들고, 해당 조건에서 simulation 한 결과 살펴보기

backup

Reflectivity



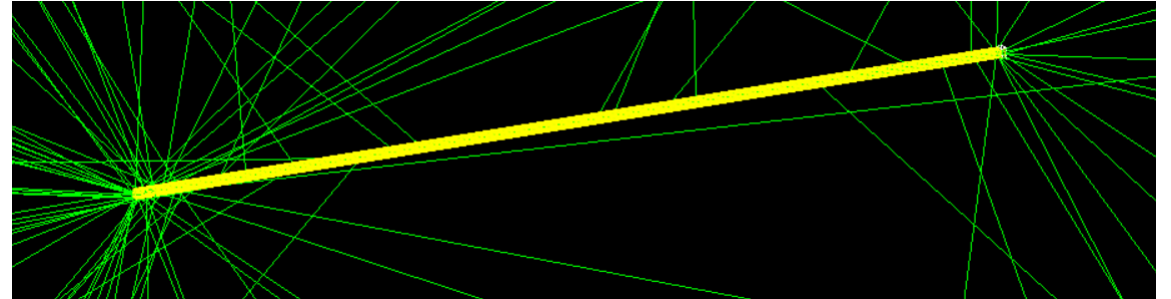
Reflectivity = 0.999



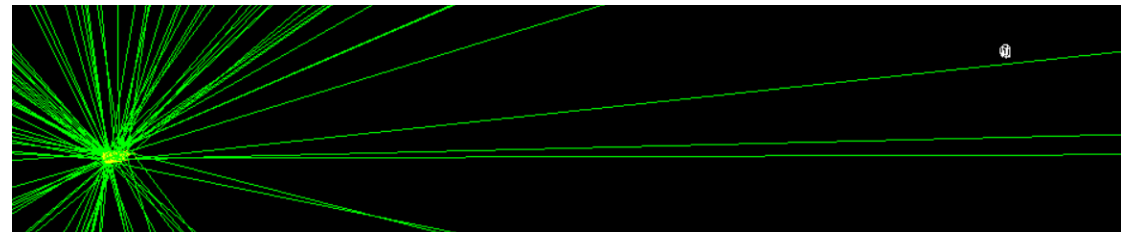
Reflectivity = 0.8

Surface

- 가능한 Surface의 종류
 - Polished/ground
 - Polished/groundFrontPainted
 - Polished/groundBackPainted
- 2nd cladding만 ground 처리 하여도 fiber의 끝까지 전파되지 않는다.



Polished WLS fiber



Ground 2nd cladding of WLS fiber