Muon

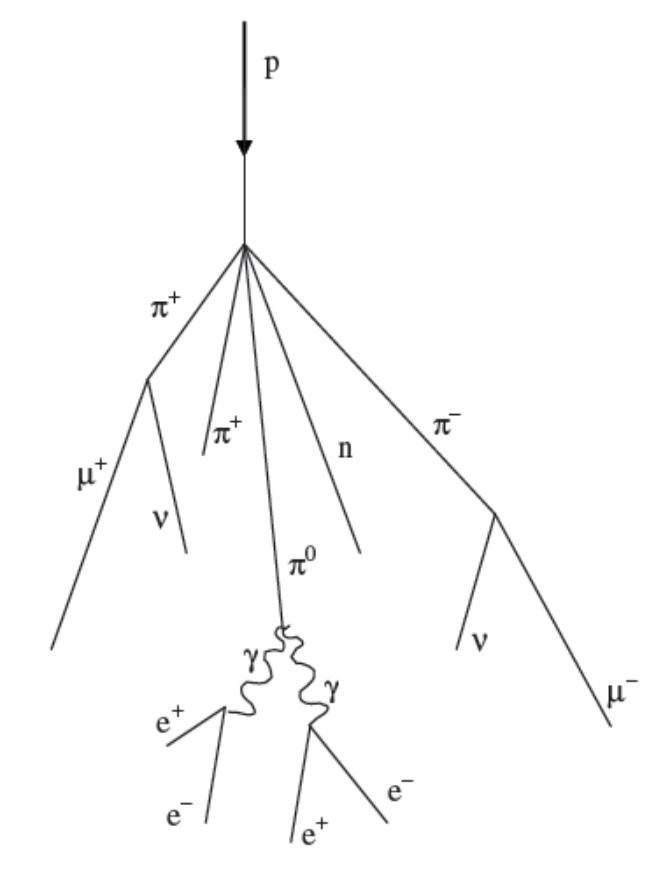
2013160183

물리학과 노 가 영

소개

What is muon?

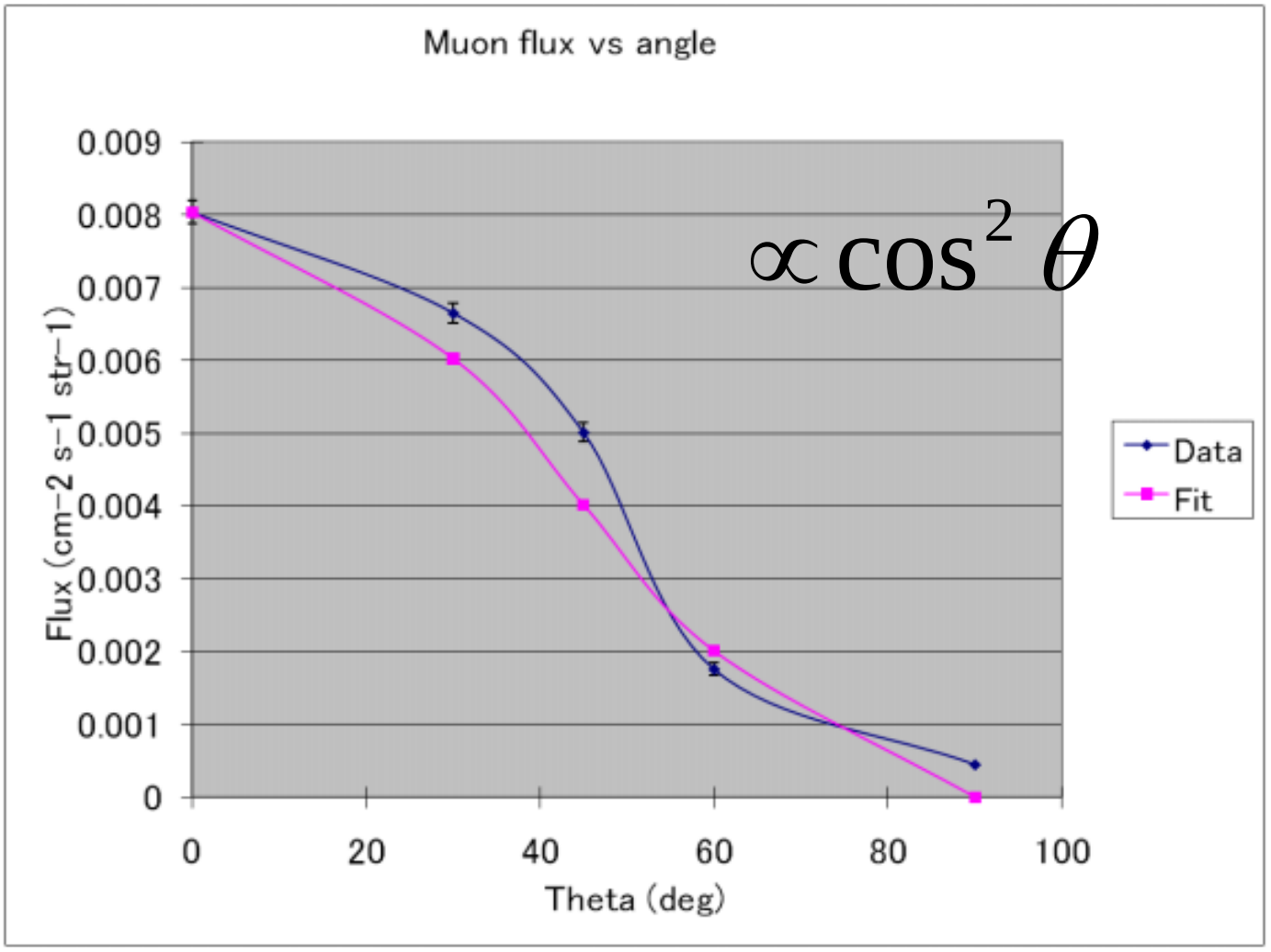
뮤온 (muon)



- Lepton 의 2세대 기본 입자
- 우주선(cosmic rays)와 원자핵의 충돌로 생성
- 속력 v = 0.998c
  평균수명 = 2.2μs

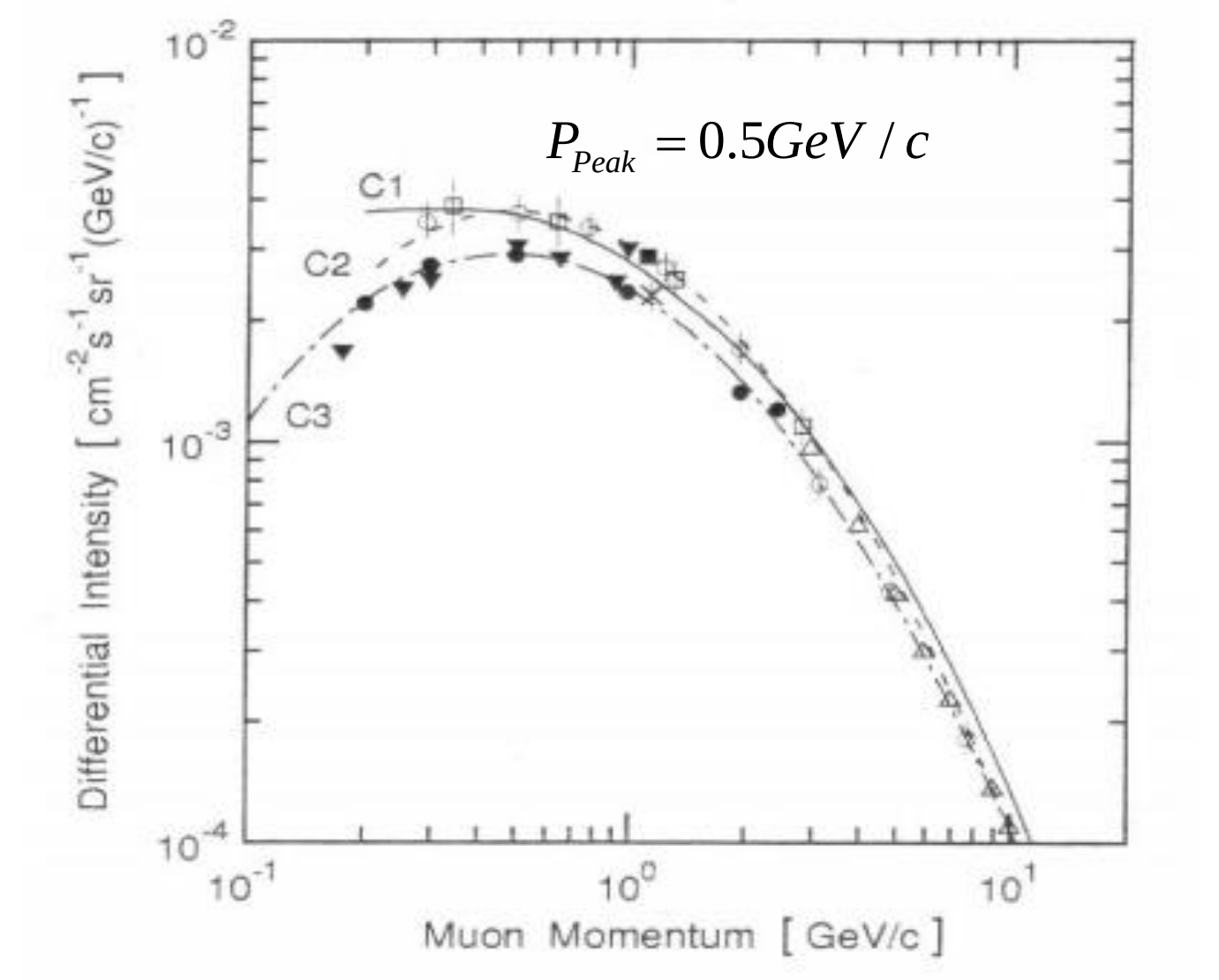
소개

Theory - Muon Angular distribution



소개

Theory - Muon Momentum distribution



소개

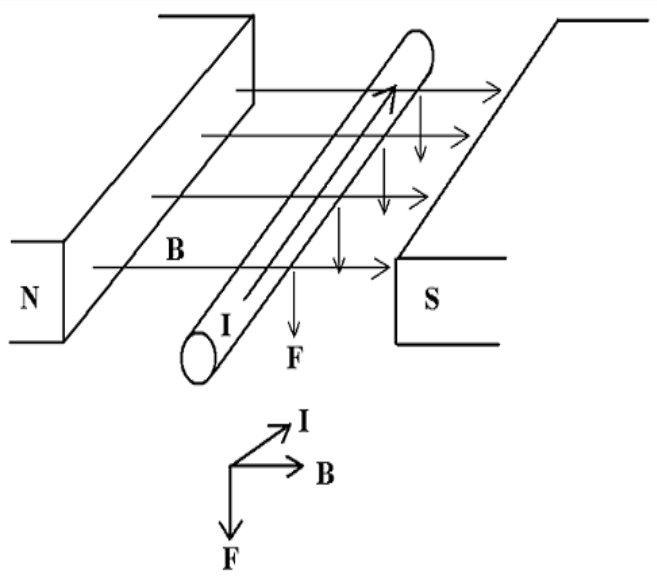
Theory - Lorentz Force

$$F = qv \times B$$

$$\frac{d\vec{p}}{dt} = q\frac{d\vec{s}}{dt} \times B$$

$$d\theta = \frac{dp}{p} = q(\frac{ds}{p})B$$

$$p = q\frac{ds}{d\theta}B = qB\rho$$



실험도구

Scintillator and Photomultipliers tube(PMT)

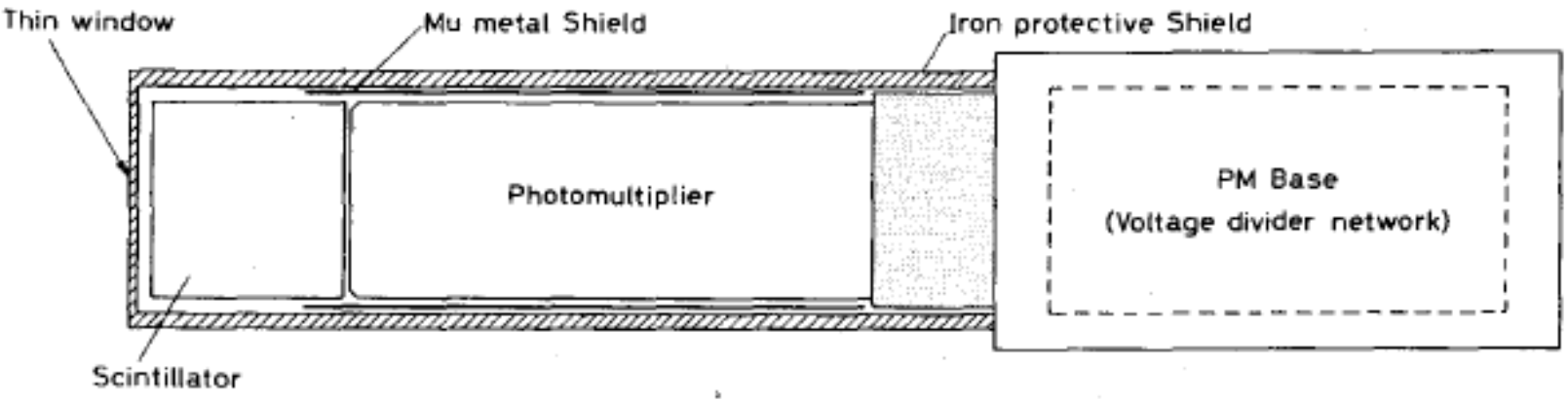
섬광(scintillation)검출기 개요

- 구조

  scintillator(개개의 입사 X선 광자에 대하여 펄스상의 광 발생-형광물질)와 광전자 증배관(PM) 구성

- 원리

  x선 입사, 신틸레이터에서 발광, 반사판으로 PM의 광



IMT@CBNU

실험도구

Scintillator and Photomultipliers tube(PMT)

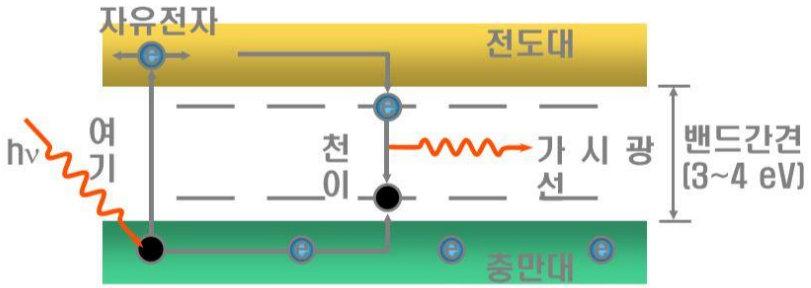
섬광검출기(Scintillation Counter, SC)의 원리

- **섬광물질**

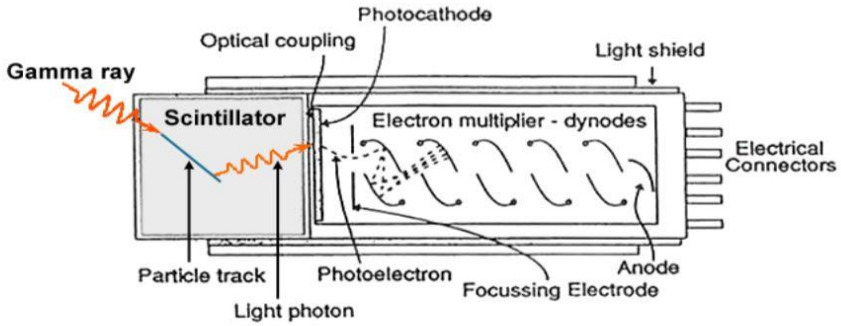
  흡수된 방사선에너지를 가시광으로 변환하여 방출하는 성질을 지닌 물질

  - 고체, 액체, 기체

  - 무기질, 유기질



- **섬광검출기와 광증배관(PMT)**

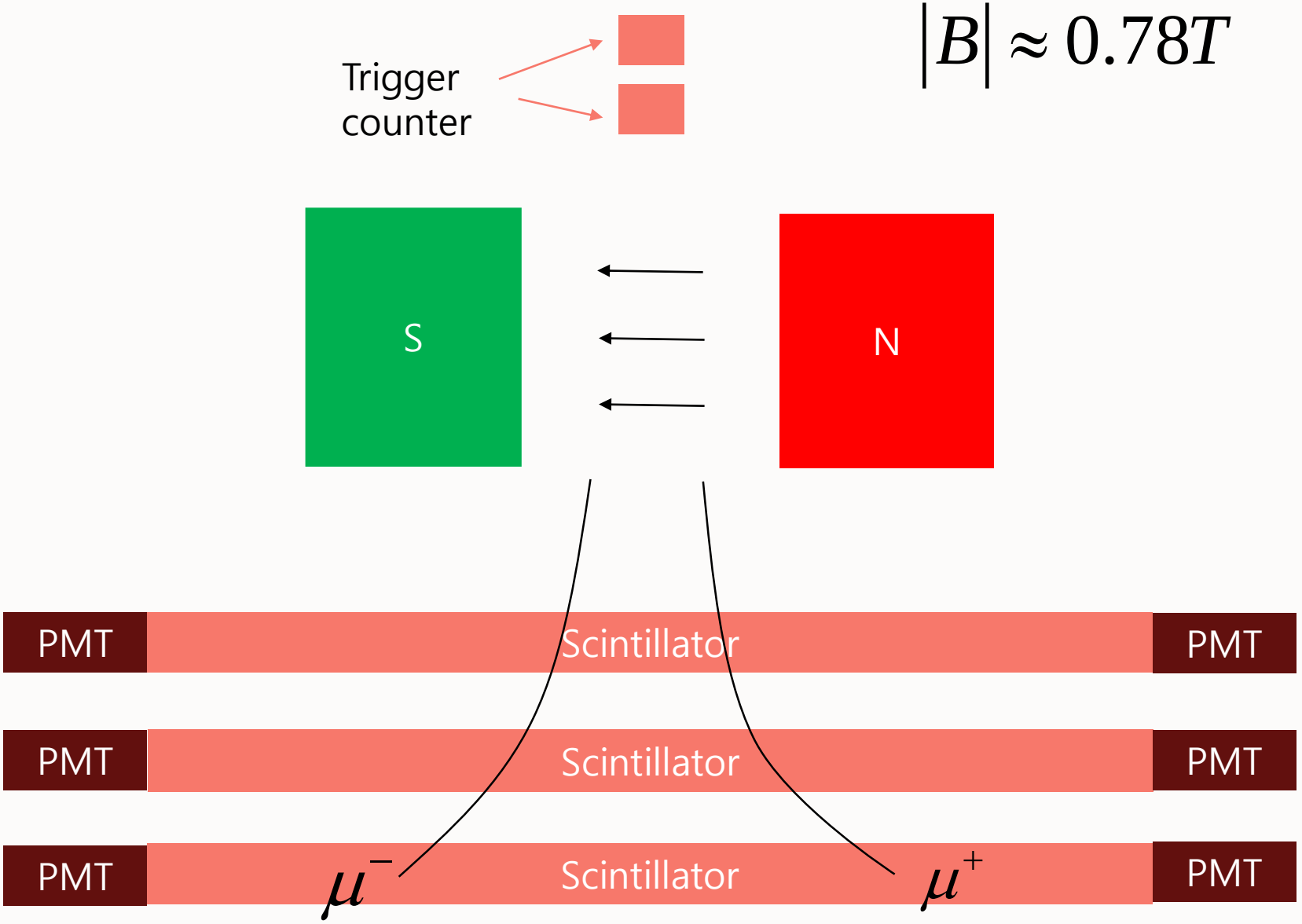


IMT@CBNU
Intelligent Materials & Technology

실험과정

Experiment Process

$$|B| \approx 0.78T$$



Thank you

for your attention