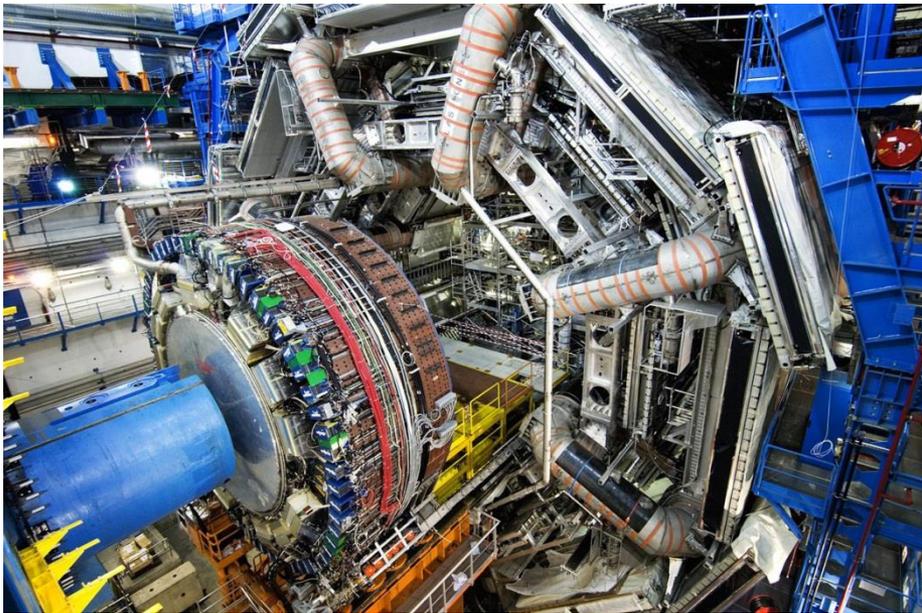
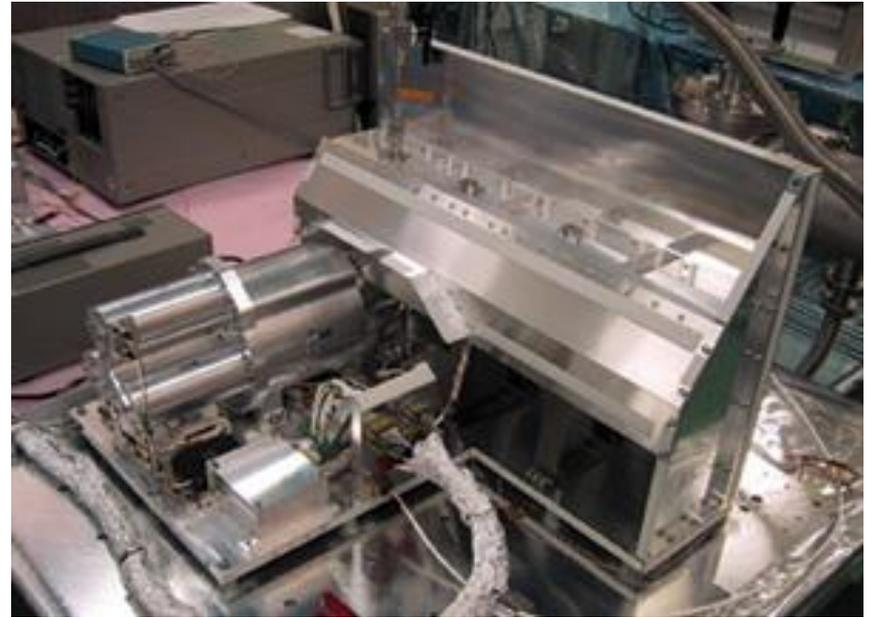


# Mesurer l'infiniment petit et observer l'infiniment grand

stefano.panebianco@cea.fr



Détecteur ATLAS - CERN

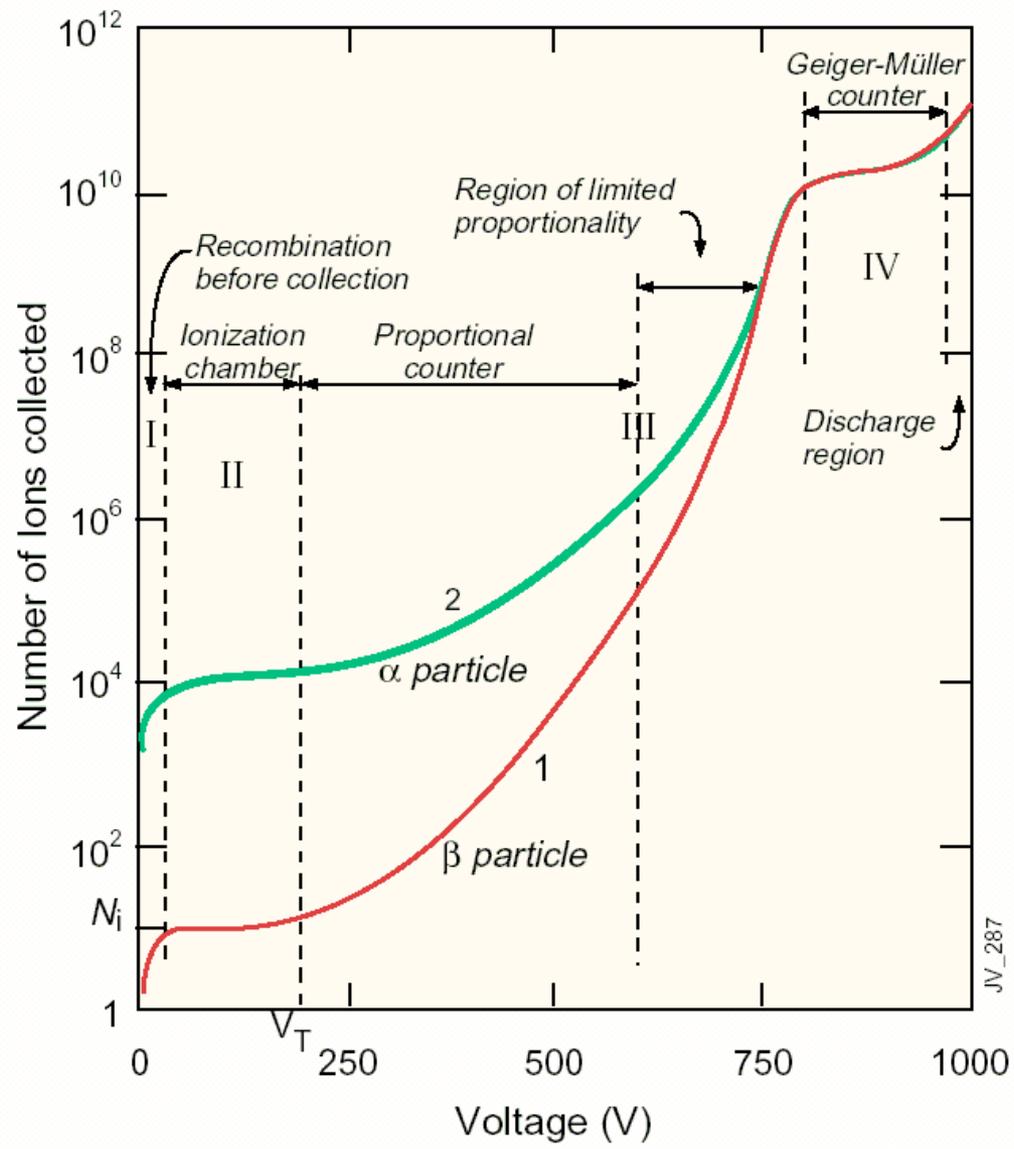


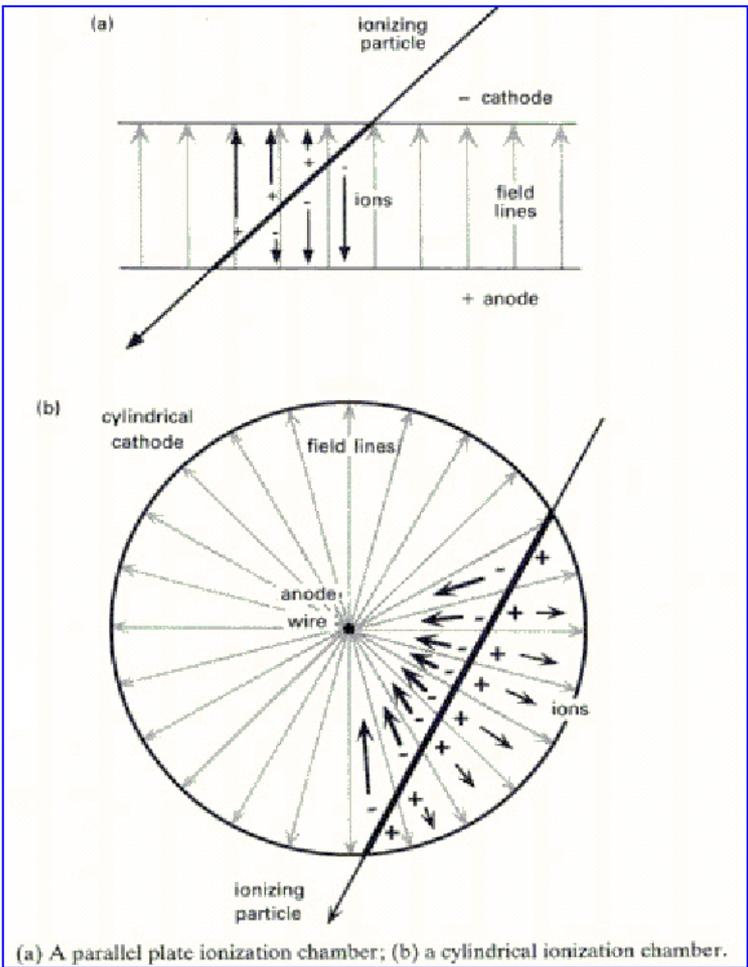
Détecteur GRD- KAGUYA

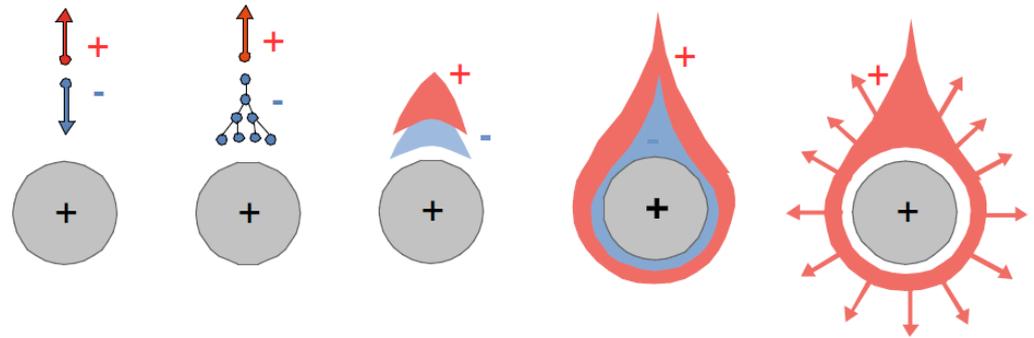
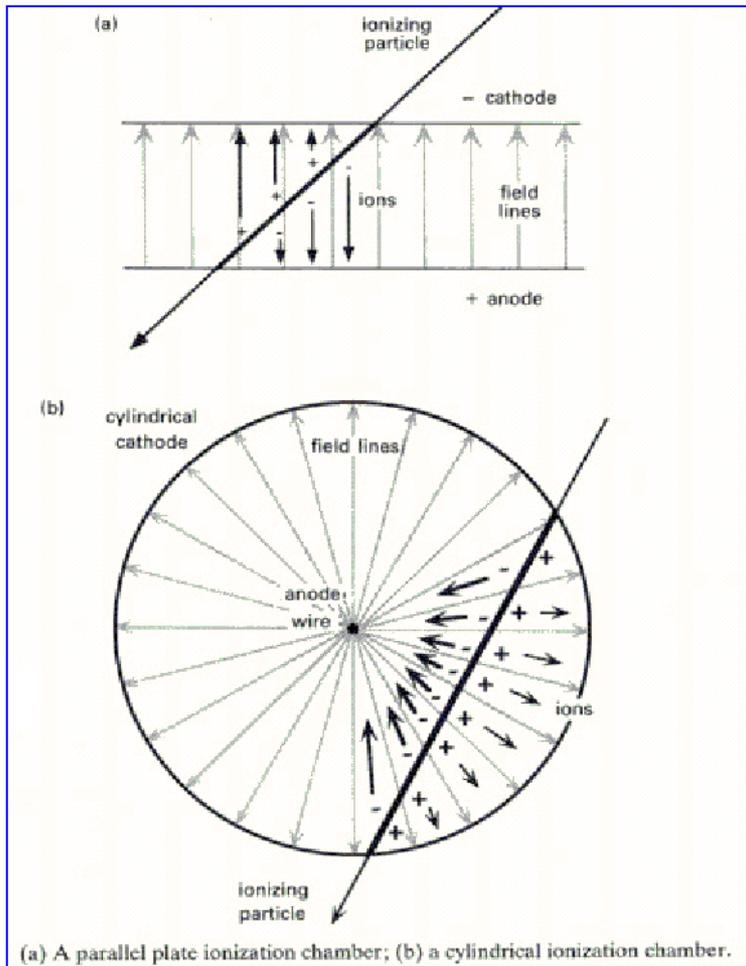
# Plan des cours

- 1<sup>er</sup> cours
  - Comment mesurer des particules subatomiques?
  - Comment ces particules interagissent-elles avec la matière?
- 2<sup>ème</sup> cours
  - Les détecteurs à ionisation
    - Les détecteurs gazeux
    - Les détecteurs semi-conducteurs
- 3<sup>ème</sup> cours
  - Les détecteurs à scintillation
  - L'électronique de lecture

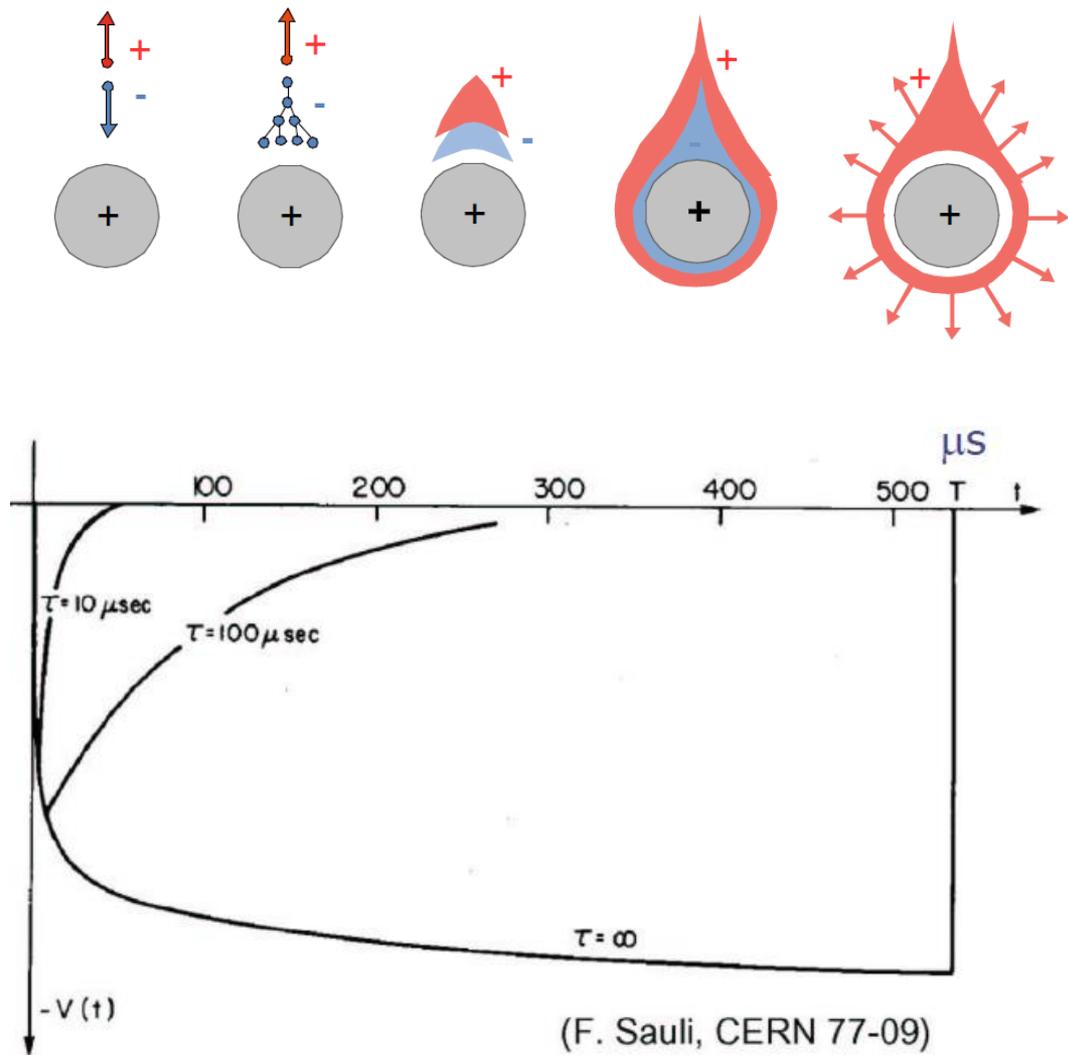
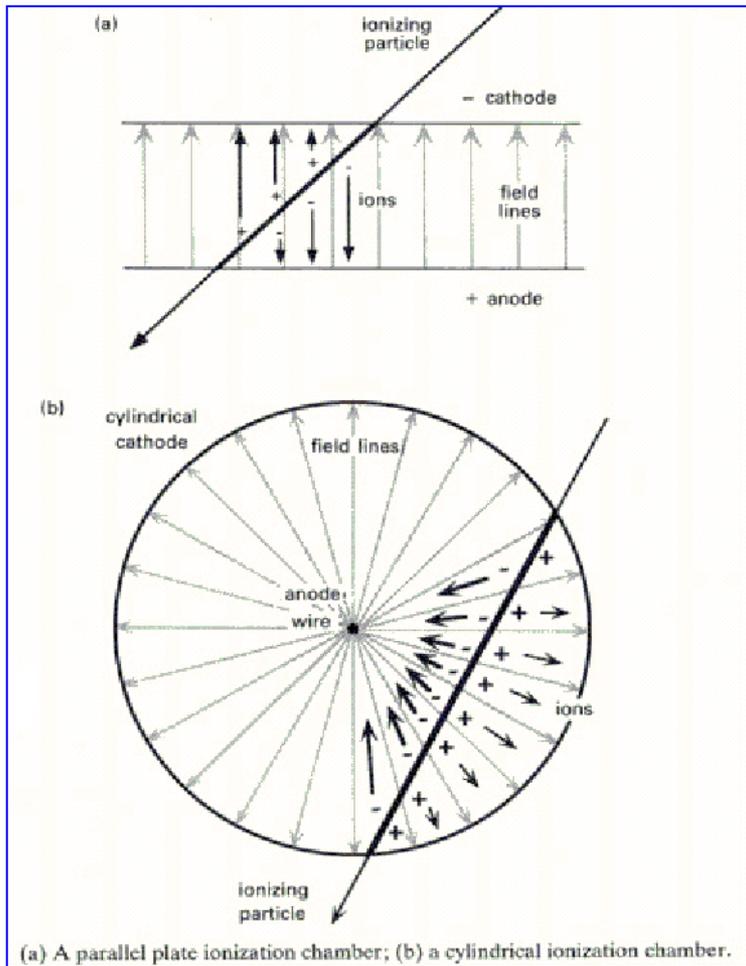
# Les détecteurs gazeux

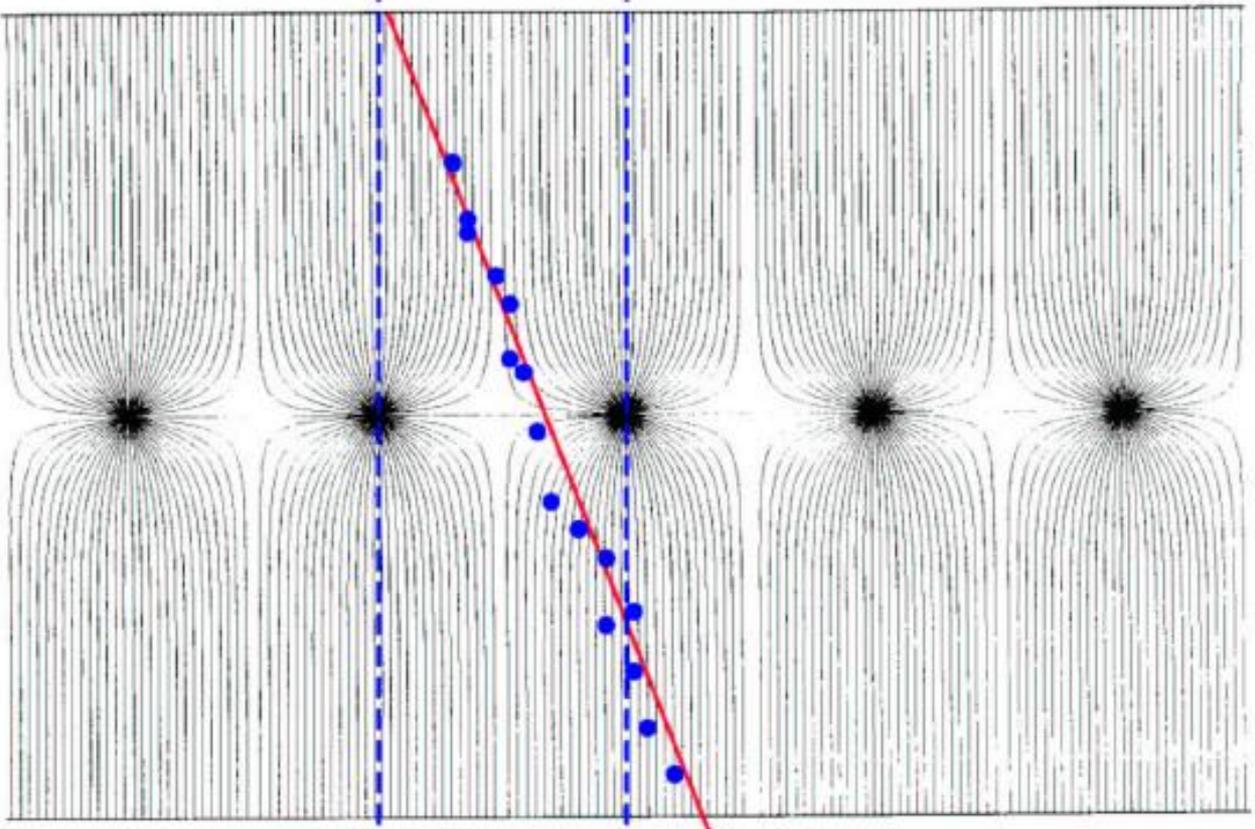


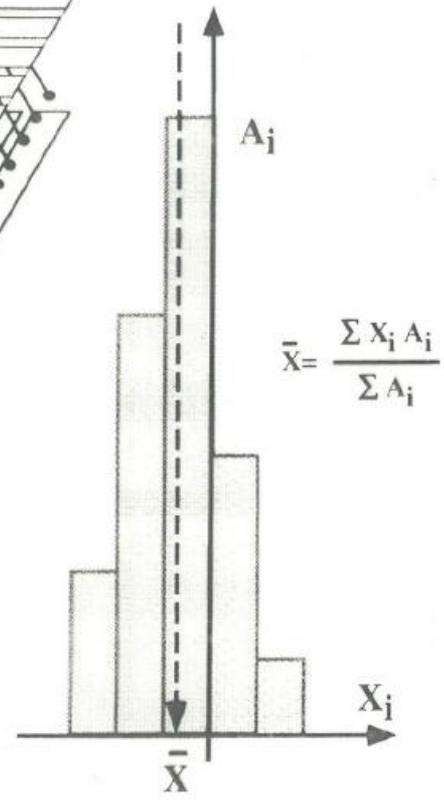
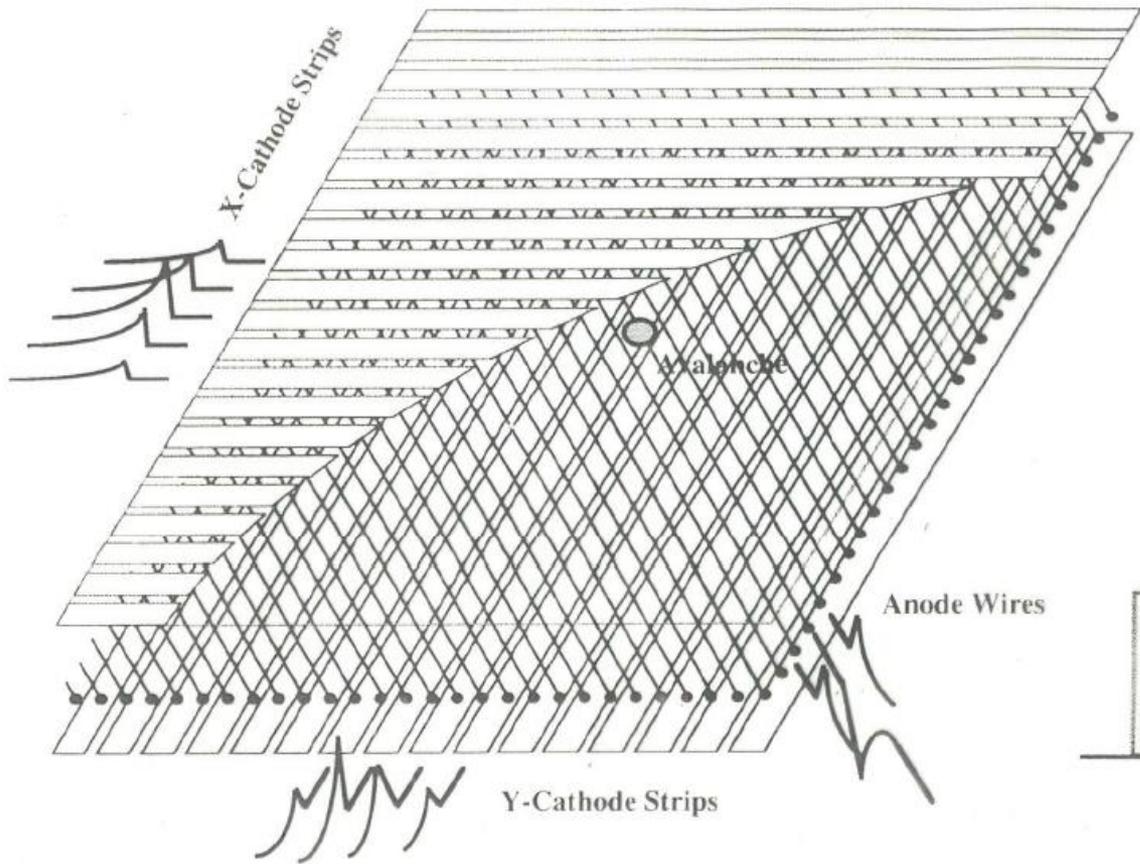


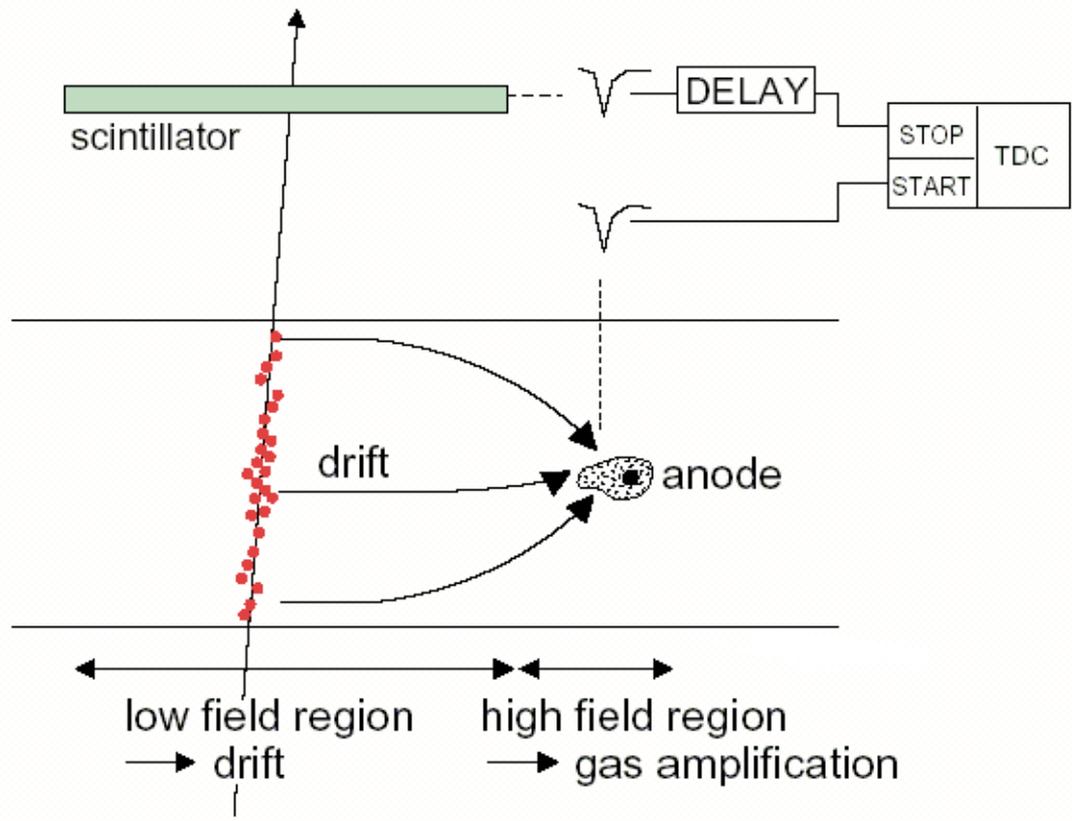


(a) A parallel plate ionization chamber; (b) a cylindrical ionization chamber.



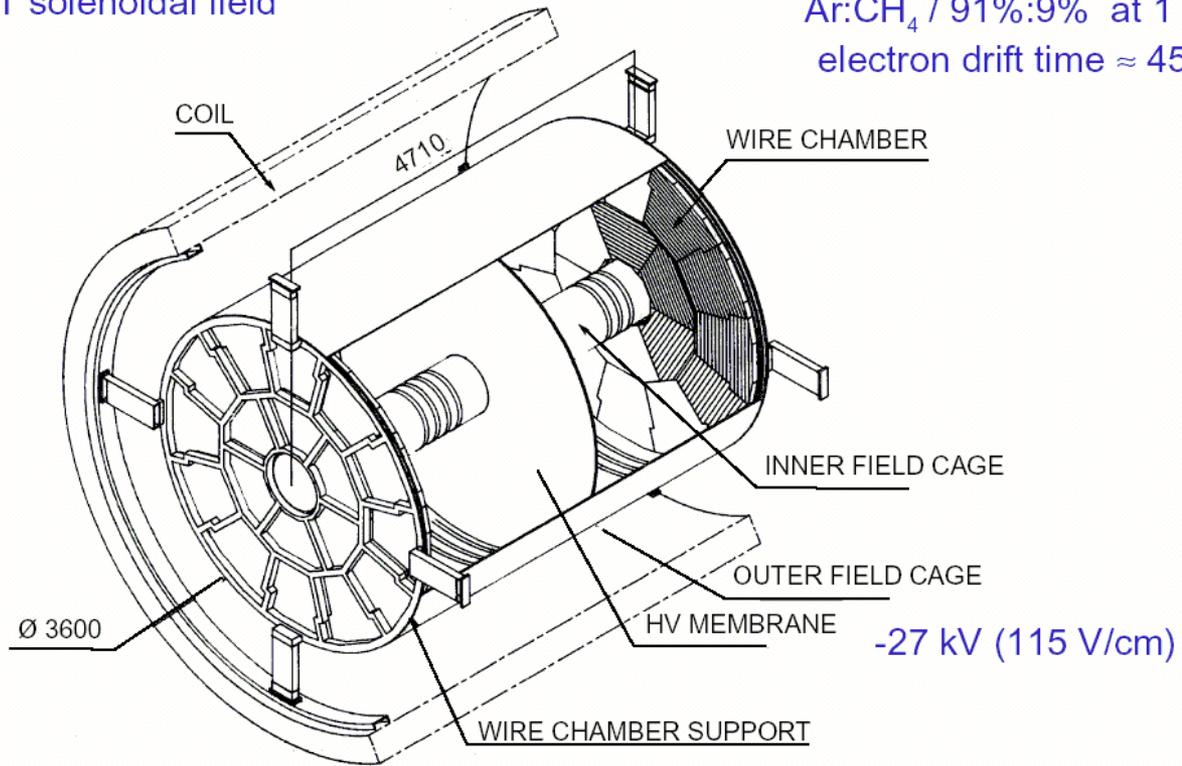


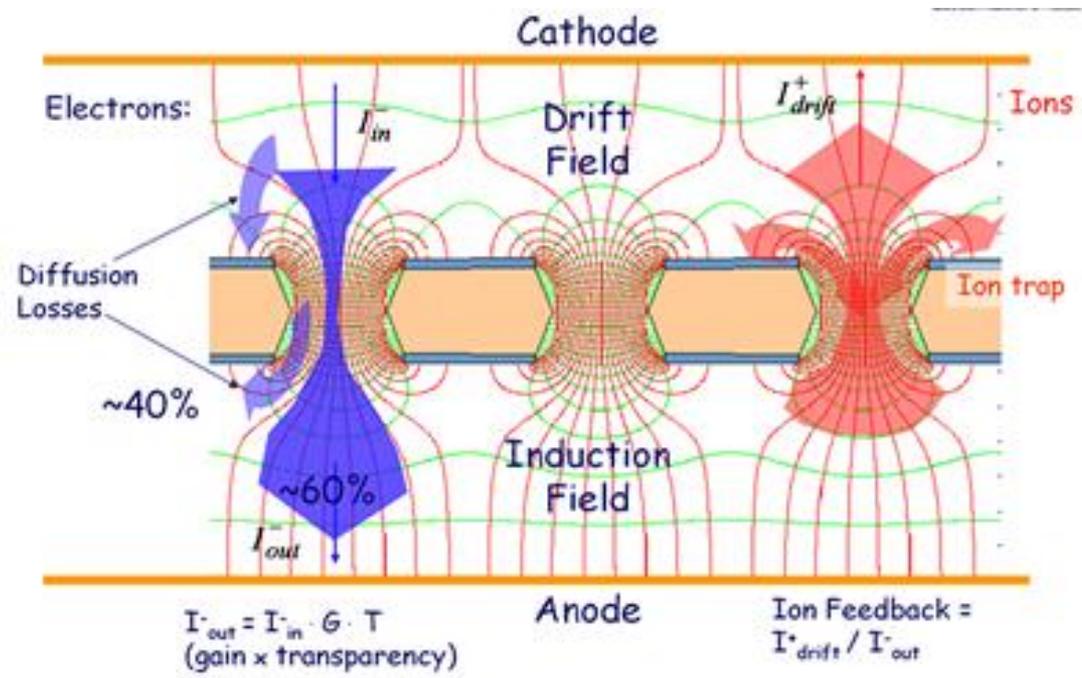
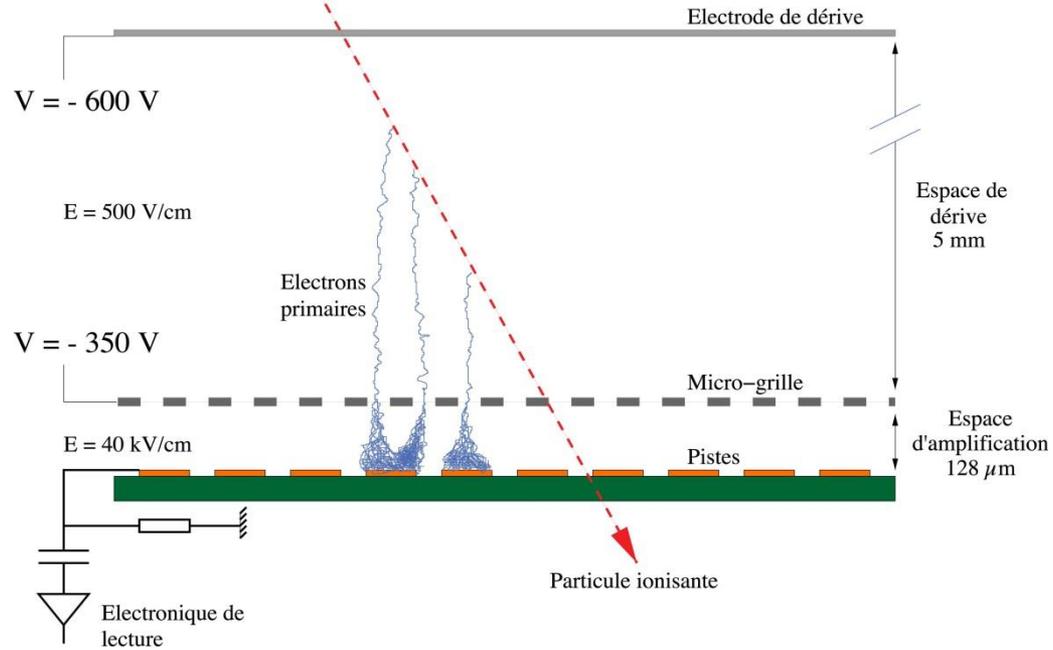




1.2 T solenoidal field

Ar:CH<sub>4</sub> / 91%:9% at 1 atm  
electron drift time  $\approx 45 \mu\text{s}$





# Les détecteurs semi-conducteurs

