

Radiation detectors From past to future

The purpose of this introductory talk will be to survey at the basic level the evolution of tools and techniques developed for nuclear radiation detection and measurement with its application in various fields from fundamental physics, nuclear security and safety to bio medical diagnostics and treatments.

Outlines of this talk will be :

-After a brief history showing the evolution of nuclear instrumentation and their relationship with scientific discoveries and potential applications, I will introduce the main features and evolution of the various components of the radiation detector family particularly:

- Detecting radiation principle
- Photon detectors
- Solid state detectors
- Gaseous detectors
- Signal treatment.
- Data processing and event selection
- Computing including simulation issues

I will illustrate each element with practical examples in various application domains. These topics will be developed in details in specific presentations later in the lecture program.

I will finish by a little educational tutorial of radiation effects and risks on human body.