

# IEEE-NPSS School on Nuclear and Plasma Opportunities for Energy and Society



Contribution ID: 8

Type: **not specified**

## The NPSS booklet about radiation facts

*Thursday 27 March 2025 14:00 (1 hour)*

This presentation intend to be a simple overview of so called 'radiation' and its use. Its main purpose is just for information and education.

### •1.1 OUR WORLD IS BATHED IN RADIATION

Human has been exposed to radiation since his first appearance on Earth. For example, we are exposed to visible radiation coming from the Sun and from space. This is known as cosmic radiation or cosmic rays.

As well as visible light, this includes invisible radiation known as ultraviolet and infrared. Both kinds of radiation are electromagnetic waves, as are radio waves, X-rays and gamma

### •1.2 Historical Context and Discovery

The discovery of nuclear radiation dates back to the late 19th century. Short history will be presented from the radioactivity to many technologies (Tracer principle, Invention of the Cyclotron, artificial radioactivity to vision and first graphite miller)

•1.3 Importance of Nuclear Radiation in Modern Society with applications spanning various fields will be presented.

### •2.1 Basics types of Radiation an Introduction

•2.2 Measuring and Detecting Radiation Radiation Units is the way to measure and quantify the degree of radiation a short description of Curie, Becquerel, Gray, Seivert

### •2.3 Example of Sources of Radiation over the world

#### •2.3.1 Example of Natural Sources -

Cosmic rays variation of natural radioactivity

#### •2.4 .Exposure for radiological X ray exposure example

Then I will be describe the application and the evolution in the medical radiation techniques from radiography, imaging modalities (Hanger camera, Spect, TDM, PET).

Finally particle therapy will be presented shortly with its radiation constraints.

**Presenter:** LE DU, Patrick