Simulação do transporte de elétrons e fótons na matéria pelo método de Monte Carlo usando o código PENELOPE/penEasy

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Scope

Interaction of

- photons (x-rays, γ-rays)
- light charged particles (electrons, positrons)

in

- complex geometries
- arbitrary materials

Goals

- Understand the basics of Monte Carlo simulation methods for radiation transport
- Use the PENELOPE/penEasy MC code to simulate (simplified) models of x-ray units, linacs, spectrometers, dosimeters, ...

Emphasis may be changed depending on your preferences

Ideal background

- Quantum mechanics, atomic physics
- Numerical methods
- Operating system (Windows, Linux)
- Programming language (Fortran)
- Practical experience with MC simulation

Level may be adapted depending on your background

Bibliography

- Handouts of the lectures
- Relevant/pedagogical articles
- PENELOPE/penEasy MC code and its documentation

Schedule

- 8 weeks
  September 10th to November 1st
- Lectures

Tuesdays	14:00–16:00
Wednesdays	16:00–18:00
Fridays	14:00–16:00

- Exam
  Date to be determined (early October)
- Practical simulation exercise
  To be assigned individually depending on your interests