ACTIVITY 1: SIMULATION OF A SCINTILLATOR DETECTOR

BACKGROUND

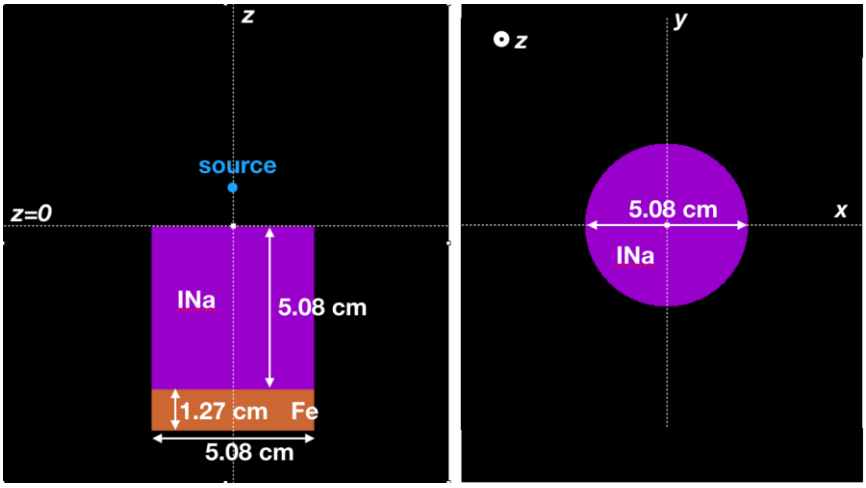
- Scintillator detectors are usually employed to do the spectroscopy of the radiation emitted by radioactive sources.
- The purpose of this activity is to simulate the operation of such detectors and analyze the information obtained.

MATERIALS

- A Monte Carlo simulation code (see Readme-MC document)
- Emission spectra of radioisotopes. Among others, they can be obtained from the following link: http://www.lnhb.fr/donnees-nucleaires/donnees-nucleaires-tableau/
- Possible radioisotopes to be analyzed: ^{22}Na, ^{60}Co, ^{125}I, ^{137}Cs, and any other of interest.

TASKS

- T1: To design the geometry of the problem as indicated in the figure. Note that the detector and the source are in vacuum. Consider only the photons emitted from the source.



- T2: To determine the energy deposited in the detector (the INa volume) per photon emitted from the source.
- T3: To analyze the spectrum obtained according to the emitted photons.