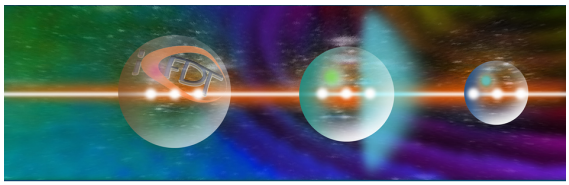

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Monte Carlo simulation of the ISOLPHARM gamma camera for Ag-111 imaging

Monday, 21 October 2024 18:05 (1 hour)

One consolidated technique for the treatment of cancer is Targeted Radionuclide Therapy (TRT). With this technique, radionuclides are attached to a specific drug that is able to bring them to the target tumor site [1]. The ISOLPHARM project is currently developing a radiopharmaceutical for TRT based on Ag-111, an innovative radionuclide [2] [3]. Ag-111 has a half-life of 7.45 days and decays emitting both electrons and gamma-rays (mainly with energy of 342 keV). The emission of gamma-rays allows the Ag-111 nuclei to be visualized through the use of a gamma camera.
In this contribution, we describe the Monte Carlo simulation built to optimize the parameters of this imaging device (see Figure 1). The software used for this aim is the Geant4 toolkit, which is able to simulate the interaction between particles and matter [4].

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