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### **Résumé :**

Monte Carlo (MC) simulation is widely recognized as an important technique to study the physics of particle interactions in nuclear medicine and radiation therapy. There are different codes dedicated to dosimetry applications and widely used today in research or in clinical application, such as MCNP, EGSnrc and Geant4. However, such codes made the physics easier but the programming remains a tedious task even for physicists familiar with computer programming. In this paper we report the development of a new interface GEANT4 Dose And Radiation Interactions (G4DARI) based on GEANT4 for absorbed dose calculation and for particle tracking in humans, small animals and complex phantoms. The calculation of the absorbed dose is performed based on 3D CT human or animal images in DICOM format, from images of phantoms or from solid volumes which can be made from any pure or composite material to be specified by its molecular formula. G4DARI offers menus to the user and tabs to be filled with values or chemical formulas. The interface is described and as application, we show results obtained in a lung tumor in a digital mouse irradiated with seven energy beams, and in a patient with glioblastoma irradiated with five photon beams. In conclusion, G4DARI can be easily used by any researcher without the need to be familiar with computer programming, and it will be freely available as an application package.

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