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Geant4 simulation of protons hitting different body materials and obtaining of the sensibility for gamma ray detectors. OMAR HERNANDEZ RODRIGUEZ, SELIM ROMERO, JORGE LOPEZ, The University of Texas at El Paso, JASON HOLMES, Arizona State University — The purpose of this study in medical physics is to identify the difference in energies between the water's histogram and the body materials and calculate the sensitivity required for gamma ray detectors. The simulation was made with Geant4, that is, the bombardment of high energy protons in different materials. Different proton energies as well as different body materials were used as targets, thus, histograms (number of counts vs energy) must be obtained and compared with the simulation of the water's histogram. The difference in energy peaks between the water's histogram and the body materials are to be measured, thus, the difference among the energy peaks of these materials will be calculated to determine the sensibility that is needed to create gamma ray detectors in real life.

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