عنوان مقاله:

Geant4 simulation for positron range in inhomogeneous medium

محل انتشار:

هشتمین کنگره فیزیک پزشکی ایران (سال: 1387)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

GEANT4 is Monte Carlo simulation toolkit which provides a new approach for development of medical applications. The positron annihilation takes place up to a centimeter from locate at which the isotope disintegrated. Our GEANT4 based application was designed in radioisotope. Simulations were done using point source in GEANT4 code. We calculate the range-blurring effect. Annihilation distributions display sharply peaked with long-range, low-intensity tails. The sharp peaks keep high spatial frequencies while the tails responsible for the main blurring effects. We consider the transport and annihilation of monoenergetic positrons in each layer of inhomogeneous medium as probability events, which can be easily computed using a set of survival probabilities. The ultimate annihilation distribution is a weighted summation over the energy spectrum.

کلمات کلیدی:

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