3612

Monte Carlo Dose Calculations of Photon Beams using BEAMnrc and GEANT4

E. S. LEE[1] K. H. Jung[2], S. W. Hong[1], and T. S. Suh[2]

[1] Sungkyunkwan University, [2] Catholic University

silversool@hanmail.net

There are many analytic methods to calibrate dose distribution for radiotherapy. The most extensively used means of these is the BEAMnrc based EGSnrc. The BEAMnrc code has great quality assurance for radiotherapy, but there are some limitations in the Beamnrc code. The BEAMnrc deals with static problems and thus is not applicable to the problems related to image guided radiotherapy, which is currently the major research area in radiotherapy. Also, therapies with heavy ions have been increasingly popular recently. However, the BEAMnrc can't deal with protons and any other heavy ions except for the electron and photon beam. One solution to these problems is to use GEANT4 code. In this paper, we compare dose distribution results from BEAMnrc and GEANT4.

Keywords : Monte Carlo, GEANT4, BEAMnrc