Contribution ID: **326** Type: **Poster**

Estimation of the Uncertainty of Energy Measurements in Charged Particle Beams using Radiochromic Films

A few years ago, our group has developed anew method for measuring doses in ultra high dose rate charged particle beams, based on multivolume ion chambers - the QUADDRO detector. The measurement, however, did not account for the energy of the particles in the beam and such a measurement was done using radiocheromic films pklaced axially in the beam.
While performimg energy measurements in 10 MeV proton beams it became apparent that the accuracy of the energy measurement is very sensitive to the accuracy of the axial allignment of the film.
The present work is meant to estimate the errors due to missalignment. Several experiment have been made using Gafchromic EBT4 films in axial presentation. The films have been irradiated to electron beam of energies varying from 5 MeV to 19 MeV and the deviation from the collinearity between the beam axis and the films was set between 0 and 5 degrees.
Similar measurements were performed in 19 MeV proton beams.
We present here the error estimations resulting from these measurements, as well as their impact of the dose measurements using the QUADDRIL detector.

Author: VASILACHE, Radu Alin (University of Bucharest, Faculty of Physics)

Co-author: SEREMET, Radu Costin (Canberra Packard SRL)

Presenter: VASILACHE, Radu Alin (University of Bucharest, Faculty of Physics)

Session Classification: Poster session

Track Classification: Accelerators and Instrumentation