Seminar

Institute for Plasma Research

Title : A Study on Teletherapy Dosimetry using Monte Carlo Code

Speaker: Dr. S. Sangeetha
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Date : 27th April 2018 (Friday)

Time : 04.00 PM

Venue : Committee Room 3, (New Building), IPR

Abstract :

A tremendous upgrade in technology and a more beneficial understanding of radiation along with its consequences on the body have induced radiation therapy an essential contribution in the cancer treatment. Under these circumstances, the field of modern teletherapy motivates the demand for more précised dose calculations. Among many algorithms formulated over the recent years for evaluating dose distributions, Monte Carlo simulations have proven to be an extremely promising in terms of accuracy by providing more realistic outcomes without biasing the results. The expression “Monte Carlo Method” is actually very general stochastic techniques based on the use of random numbers and probability statistics to scrutinize complex problems. An achievement in the prominent computation speed and accuracy along with the knowledge of simplicity in the usage of Monte Carlo codes will unquestionably leads to a significant role in executing treatment oriented applications in the field of medical radiation physics very effectively. Hence the scope of the work is to promote the utilization of Monte Carlo simulation as a milestone approach in all clinical and research centres with a wide applications in the forthcoming generation for small field dosimetry. The presentation outlines the results of dosimetric beam characteristics for the modelled linear accelerator for FF (Flattening Filter) and FFF (Flattening-Filter-Free) mode for 6 MV photon beams using Monte Carlo simulation. The prominent outcome of the result observes that the FFF beam can enhance the treatment outcome in the field of radiation therapy where the homogeneous dose is not necessary and they are well suitable in delivering accurate dose calculations for inhomogeneity effect in small field sizes.