



Proton therapy dosimetry: a brief overview and challenges

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Proton radiation therapy is becoming increasingly popular because it promises dose conformality comparable to or better than those in IMRT treatments, while significantly sparing the normal surrounding tissue because of the low entrance dose and virtually no exit dose when compared to conventional treatment methods using photon or electron radiation. This presentation provides a brief overview of proton radiation therapy. The emphasis is on the physics of clinical proton dosimetry. In the physics standpoint, some important unresolved issues in the field of clinical proton dosimetry include: 1) estimating range uncertainties; 2) modeling dose distributions; and 3) measuring linear energy transfer which relates to the relative biological effectiveness of the proton dose. Research focused on advancing the knowledge in the mentioned issues through Monte Carlo simulations and measurements of proton radiation therapy beams will be presented.

Dr. Sawakuchi's research interests include particle therapy dosimetry and development of novel ionizing radiation detectors for applications in medicine.

Dr. Sawakuchi obtained his B.Sc. and M.Sc. in Physics at the University of Sao Paulo, Brazil and earned his Ph.D. in Physics at Oklahoma State University, USA. Then, he spent two years at the M. D. Anderson Cancer Center, Houston as a postdoctoral fellow. Dr. Sawakuchi joined the Department of Physics at Carleton University in April of 2010 as an assistant professor.

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admission is free

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Light refreshment will be served