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PET scanning of ocular melanoma after proton therapy

Friday 9 September 2016 09:00 (20 minutes)

The Proton Therapy Facility at TRIUMF is in routine operation treating ocular tumours using 74 MeV protons extracted from the 500 MeV H- cyclotron. Proton therapy results in the activation of the irradiated tissue and provides an opportunity for in-vivo verification via the measurement of irradiation induced activity. The activity distribution resulting from these irradiation induced positron emitters is measurable through post-therapeutic positron emission tomography (PET) scans. The feasibility of using PET as a verification tool for eye treatment is being investigated in this project. A lucite target and a 3-D printed eye were irradiated with a pristine/raw Bragg Peak (RBP) and a Spread-out Bragg peak (SOBP). The isotopic activity inside the targets was calculated with Monte Carlo codes GEANT4 and FLUKA and validated with data from PET scanners taken 15 minutes after end of beam (EOB).

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Session Classification: Student presentations