

Abstract

Radiation therapy has made a considerable technological evolution in recent decades, but many problems are yet to be solved. Over the last two decades, I have had the pleasure as a radiation oncologist with a physics background to help developing innovative detector solutions to address major uncertainties in proton and ion radiation therapy and to develop fast monitors of the beam intensity during FLASH radiation therapy. In this talk, I will give an overview of three of these developments: (1) detectors for proton imaging, (1) detectors for evaluating beam quality with nanodosimetry, and (3) detectors for ultrafast, transparent beam monitoring.