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The particle therapy experience and recent developments

Although particle therapy, particularly proton therapy is not a new technology having been initiated in 1952 at the University of California at Berkeley cyclotron, it may be considered relatively new and certainly medical physicists are less familiar with the clinical practice of particle therapy due to the scarcity of facilities worldwide. At last accounting, there were 67 facilities in operation worldwide with another 49 under construction and a small fraction of the several thousands of linear accelerator X ray therapy facilities. As charged particles interact with matter in fundamentally different ways than neutral particles, the planning and delivery of particle therapy requires a unique intuition based both on physics and on radiation biology. This presentation will discuss the therapy, radiation machine design, radiation biology and clinical techniques relevant to particle therapy.

Biography

Susan B Klein completed her PhD in Biophysics at University of California (Berkeley) in 1986. She completed her Post-doctoral training at University of Michigan in Biophysics and Radiation Oncology. After several years of bioengineering, she joined Indiana University Cyclotron Facility in 1990 where she examined proton radiation biology and began practicing medical physics. She is one of the seven intellectual property holders of the design, fabrication and operation of Midwest Proton Radiotherapy Institute. She is currently an Associate Director at Indiana University-Purdue University

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