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Altri autori (Persone)	BourlandJ. Daniel
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Nota di contenuto	Optical and remote monitoring IGRT / Sanford L. Meeks ... [et al.] -- Ultrasound-guided radiation therapy / Janelle A. Molloy -- In-room CT system for IGRT / James R. Wong, Minoru Uematsu, and Zhangroung Gao -- Megavoltage fan beam CT IGRT / Gustavo Hugo Olivera and Thomas Rockwell Mackie -- Kilovoltage cone-beam CT guidance radiation therapy / Jeffrey H. Siewerdsen and Jan-Jakob Sonke -- Megavoltage cone-beam IGRT / Olivier Morin and Jean Pouliot -- Kilovoltage x-ray IMRT and IGRT / Hiroki Shirato ... [et al.] -- Kilovoltage radiography for robotic linac IGRT / Martin J. Murphy -- Respiratory-correlated CT / Carnell J. Hampton -- 4D PET/CT in radiotherapy / Sadek A. Nehmeh and Yusuf E. Erdi -- On-board digital tomosynthesis : an emerging new technology for image-guided radiation therapy / Q. Jackie Wu ... [et al.] -- Image registration and segmentation in radiation therapy / Michael B. Sharpe, Michael Velec, and Kristy K. Brock.
Sommario/riassunto	Preface This book presents key image-guided radiation treatment (IGRT) technologies for external beam radiotherapy and caps a multidecade phase of technology development in the realm of conformal, customized radiation treatment. This development phase has been somewhat brief and vigorous, with new IGRT innovations such

as increased image fidelity and adaptive radiotherapy continuing through the present day. IGRT had been in development in earnest since the early 1990s as a desired companion to intensity-modulated radiation treatment (IMRT). It was known at the time that beam-intensity modulation would be proven to enable beamlets of radiation dose to be formed and delivered to give highly conformal treatment to target volumes, while at the same time providing avoidance of even nearby normal structures. IMRT was being developed with pathways that were based on particular technological features of each vendor's designs for their multileaf collimators (MLCs) and linear accelerators, e. g., leaf design (width, height, focus, speed, etc.), dose rate control, error checking, and gantry motion control. In a previous decade, the 1980s into the mid-1990s, three-dimensional conformal radiation treatment (3D-CRT) had been developed such that for the first time, using static pretreatment 3D images from computed tomography (CT), anatomical volumes could be identified and segmented for the target, normal structures, and the external contour. As 3D-CRT and IMRT technologies developed, it was recognized that confirming correct treatment geometry for every individual fraction might be important, since daily variations in treatment position and the locations of internal structures would lead to blurring (degradation) of the cumulative dose distribution--Provided by publisher.