

1. Record Nr.	UNINA9910300406703321
Autore	Amaldi Ugo
Titolo	Particle Accelerators: From Big Bang Physics to Hadron Therapy // by Ugo Amaldi
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-08870-X
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (293 p.)
Disciplina	523.1 530 539.7 539.73
Soggetti	Physics Nuclear physics Medicine Health Radiology Particle acceleration Cosmology Popular Science in Physics Particle and Nuclear Physics Popular Science in Medicine and Health Diagnostic Radiology Particle Acceleration and Detection, Beam Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Introduction -- The First Fifty Years -- Small Accelerators Get Bigger -- The Last Fifty Years -- Matter-Particles And Force-Particles -- Searching For The Higgs Field -- An Expected Discovery, Susy And Beyond -- The Beginnings of Accelerators in Medicine -- Accelerators Which Heal -- Epilogue: CERN Reverts The March Of Time.
Sommario/riassunto	Rather than focusing on the contributions of theoretical physicists to the understanding of the subatomic world and of the beginning of the

universe - as most popular science books on particle physics do - this book is different in that, firstly, the main focus is on machine inventors and builders and, secondly, particle accelerators are not only described as discovery tools but also for their contributions to tumour diagnosis and therapy. The characters of well-known (e.g. Ernest Lawrence) and mostly unknown actors (e.g. Nicholas Christofilos) are outlined, including many colourful quotations. The overall picture supports the author's motto: "Physics is beautiful and useful". Advance appraisal: "Accelerators go all the way from the unique and gargantuan Large Hadron Collider to thousands of smaller versions in hospitals and industry. Ugo Amaldi has experience across the range. He has worked at CERN and has for many years been driving the application of accelerators in medicine. This is a must-read introduction to this frontier of modern technology, written beautifully by a world expert." Frank Close, Professor of Physics at Oxford University author of "The Infinity Puzzle" "This book should be read by school teachers and all those interested in the exploration of the microcosm and its relation to cosmology, and in the use of accelerators for medical applications. With a light hand and without formulae the author easily explains complicated matters, spicing up the text with amusing historical anecdotes. His reputation as an outstanding scientist in all the fields treated guarantees high standards." Herwig Schopper, former CERN Director General author of "LEP - The Lord of the Collider Rings at CERN" "This book tells the story of modern physics with an unusual emphasis on the machine-builders who made it all possible, and their machines. Learning to accelerate particles has enabled physicists to probe the subatomic world and gain a deeper understanding of the cosmos. It has also brought numerous benefits to medicine, from the primitive X-ray machines of over a century ago to today's developments in hadron therapy for cancer. Amaldi tells this story in a most fascinating way." Edward Witten, Professor of Mathematical Physics at the Institute for Advanced Study in Princeton; Fields Medal (1990).

---