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Titolo	Accelerator Physics at the Tevatron Collider / / edited by Valery Lebedev, Vladimir Shiltsev
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2014
ISBN	1-4939-0885-5
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (496 p.)
Collana	Particle Acceleration and Detection, , 1611-1052
Disciplina	539.73
Soggetti	Particle acceleration Nuclear physics Heavy ions Particles (Nuclear physics) Quantum field theory Physical measurements Measurement Particle Acceleration and Detection, Beam Physics Nuclear Physics, Heavy Ions, Hadrons Elementary Particles, Quantum Field Theory Measurement Science and Instrumentation
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 at the end of each chapters and index.
Nota di contenuto	Introduction -- Beam Orbits and Optics, Methods Used at the Tevatron Accelerators -- Magnets and Magnetic Field Effects -- Longitudinal Beam Manipulations -- Collective Instabilities in the Tevatron Collider Run II Accelerators -- Emittance Growth and Beam Loss -- Antiproton Production and Cooling -- Beam-Beam Effects and Their Simulations -- Beam Instrumentation -- Appendix A.
Sommario/riassunto	This book presents the developments in accelerator physics and technology implemented at the Tevatron proton-antiproton collider, the world's most powerful accelerator for almost twenty years prior to the completion of the Large Hadron Collider. The book covers the history of collider operation and upgrades, novel arrangements of

beam optics and methods of orbit control, antiproton production and cooling, beam instabilities and feedback systems, halo collimation, and advanced beam instrumentation. The topics discussed show the complexity and breadth of the issues associated with modern hadron accelerators, while providing a systematic approach needed in the design and construction of next generation colliders. This book is a valuable resource for researchers in high energy physics and can serve as an introduction for students studying the beam physics of colliders.
