

1. Record Nr.	UNINA9910818565703321
Autore	Livingston James D. <1930->
Titolo	Rising force : the magic of magnetic levitation // James D. Livingston
Pubbl/distr/stampa	Cambridge, Mass., : Harvard University Press, 2011
ISBN	0-674-06109-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (288 p.)
Disciplina	538
Soggetti	Magnetic fields Magnetic suspension
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 index.
Nota di contenuto	Levity vs. gravity -- Gravitational and magnetic forces -- Maglev-a balance of forces -- Spinning the levitron -- Inducing uplift -- Flying frogs -- Super-lev -- Feeding back -- In a spin -- The no-spin zone -- Flying trains -- All aboard! -- Keeping it up.
Sommario/riassunto	From Peter Pan to Harry Potter, from David Copperfield to levitating toys, there is magic in conquering gravity. In this first-ever popular introduction to "maglev"- the use of magnetic forces to overcome gravity and friction-James D. Livingston takes lay readers on a journey of discovery, from basic concepts to today's most thrilling applications. The tour begins with examples of our historical fascination with levitation, both real and fake. At the next stop, Livingston introduces readers to the components of maglev: gravitational and magnetic forces in the universe, force fields, diamagnetism and stabilization, superdiamagnetism and supercurrents, maglev nanotechnology, and more. He explores the development of the superconductors that are making large-scale levitation devices possible, and the use of magnetic bearings in products ranging from implanted blood pumps to wind turbines, integrated circuit fabrication, and centrifuges to enrich uranium. In the last chapters, we arrive at the science behind maglev transportation systems, such as Chinese trains that travel 250 miles per hour without touching the tracks. Packed with fascinating anecdotes about the colorful personalities who have "fought friction by fighting gravity," the book maintains accuracy throughout while it entertains

and informs technical and nontechnical readers alike. With so many new applications for magnetic levitation on the horizon, Rising Force is sure to retain its own magic for years to come.
