

1. Record Nr.	UNINA9910265942403321
Autore	Brown Robert W. <1941->
Titolo	Magnetic resonance imaging : physical principles and sequence design // Robert W. Brown, Ph.D, Institute Professor and Distinguished University Professor, Case Western Reserve University, Cleveland, Ohio, USA [and four others]
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, Incorporated, , [2014] ©2014
ISBN	1-118-63395-4 1-118-63398-9 1-118-63397-0
Edizione	[Second edition.]
Descrizione fisica	1 online resource (1161 p.)
Disciplina	616.07/548
Soggetti	Magnetic resonance imaging
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Preceded by Magnetic resonance imaging : physical principles and sequence design / E. Mark Haacke [and others]. c1999.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Magnetic resonance imaging: a preview -- Classical response of a single nucleus to a magnetic field -- Rotating reference frames and resonance -- Magnetization, relaxation, and the Bloch equation -- The quantum mechanical basis of precession and excitation -- The quantum mechanical basis of thermal equilibrium and longitudinal relaxation -- Signal detection concepts -- Introductory signal acquisition methods: free induction decay, spin echoes, inversion recovery, and spectroscopy -- One-dimensional Fourier imaging, k-space and gradient echoes -- Multi-dimensional Fourier imaging and slice excitation -- The continuous and discrete Fourier transforms -- Sampling and aliasing in image reconstruction -- Filtering and resolution in Fourier transform image reconstruction -- Projection reconstruction of images -- Signal, contrast, and noise -- A closer look at radiofrequency pulses -- Water/fat separation techniques -- Fast imaging in the steady state -- Segmented k-space and echo planar imaging -- Magnetic field inhomogeneity effects and T*2 dephasing -- Random walks, relaxation, and diffusion -- Spin density, T1 and T2 quantification methods in MR imaging -- Motion artifacts and flow

compensation -- MR angiography and flow quantification -- Magnetic properties of tissues: theory and measurement -- Sequence design, artifacts, and nomenclature -- Introduction to MRI coils and magnets -- Parallel imaging -- Electromagnetic principles: a brief overview -- Statistics -- Imaging parameters to accompany figures.
