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| Titolo | Quantitative ultrasound in soft tissues // Jonathan Mamou, Michael L. Oelze, editors |
| Pubbl/distr/stampa | Dordrecht, Netherlands : , : Springer, , 2013 |
| ISBN | 94-007-6952-0 |
| Edizione | [1st ed. 2013.] |
| Descrizione fisica | 1 online resource (xvi, 444 pages) : illustrations (some color) |
| Collana | Gale eBooks |
| Disciplina | 616.707543 |
| Soggetti | Diagnostic ultrasonic imaging |
| 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 | State of the art methods for estimating the backscatter coefficients -- Quantitative Ultrasound History and Successes -- Statistics of Scatterer Property Estimates -- Attenuation Compensation and Estimation -- Quantitative Ultrasound and Cell Death -- Modeling of Ultrasound Backscattering by Aggregating Red Blood Cells -- Backscatter Quantification for the Detection of Metastatic Regions in Human Lymph Nodes -- Quantitative Ultrasound for Tissue-type Imaging of the Prostate: Implications for Planning and Guiding Biopsies and Focal Treatments -- Therapy Monitoring and Assessment Using Quantitative Ultrasound -- Review of Envelope Statistics Models for Quantitative Ultrasound Imaging and Tissue Characterization -- The Quantitative Ultrasound Diagnosis of Liver Fibrosis Using Statistical Analysis of the Echo Envelope -- Recent Applications of Acoustic Microscopy for Quantitative Measurement of Acoustic Properties of Soft Tissues -- Acoustic Microscopy of Cells -- Methods for Forward and Inverse Scattering in Ultrasound Tomography -- Clinical Results with Ultrasound Computed Tomography of the Breast. |
| Sommario/riassunto | Due to parallel advances in signal processing and computer hardware in the last 15 years, quantitative ultrasound techniques have reached maturity, allowing for the construction of quantitative maps or images of soft tissues. This book will focus on 5 modern research topics related to quantitative ultrasound of soft tissues: - Spectral-based methods for tissue characterization, tissue typing, cancer detection, etc.; - Envelope statistics analysis as a means of quantifying and |

imaging tissue properties; - Ultrasound elastography for quantifying elastic properties of tissues (several clinical ultrasound scanners now display elastography images); - Scanning acoustic microscopy for forming images of mechanical properties of soft tissues with micron resolution (desktop size scanners are now available); and - Ultrasound computer tomography for breast cancer imaging (new ultrasound tomography systems have been developed and are currently under evaluation clinically).
