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Altri autori (Persone)	WegleinArthur B
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Soggetti	Linear operators - Generalized inverses Scattering (Mathematics) Seismic reflection method
Lingua di pubblicazione	Inglese
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Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction : modeling, migration, imaging, and inversion -- Basic migration concepts -- Prestack migration -- Migration limitations -- Models for wave propagation and reflection -- Green's functions -- The scattering potential -- Reflectivity -- Synthesizing reflection data -- Frequency-wavenumber migration -- Asymptotic modeling and migration -- Residual asymptotic migration -- Asymptotic data mapping and continuation -- Least-squares asymptotic migration -- Appendix A. Conventions and glossary of terms -- Appendix B. Coordinates, vectors, and identities -- Appendix C. Fourier and Radon transforms -- Appendix D. Surface and pointwise reflectivity -- Appendix E. Useful filters -- Appendix F. The phase integral and the

stationary phase approximation -- Appendix G. The diffraction integral
-- Appendix H. Wave-based, ray-based, and reflector-based
coordinates.

Sommario/riassunto

Extracting information from seismic data requires knowledge of seismic wave propagation and reflection. The commonly used method involves solving linearly for a reflectivity at every point within the Earth, but this book follows an alternative approach which invokes inverse scattering theory. By developing the theory of seismic imaging from basic principles, the authors relate the different models of seismic propagation, reflection and imaging - thus providing links to reflectivity-based imaging on the one hand and to nonlinear seismic inversion on the other. The comprehensive and physically complete linear imaging foundation developed presents new results at the leading edge of seismic processing for target location and identification. This book serves as a fundamental guide to seismic imaging principles and algorithms and their foundation in inverse scattering theory and is a valuable resource for working geoscientists, scientific programmers and theoretical physicists.
