1.	Record Nr.	UNISA996418255303316
	Autore	Isozaki Hiroji <1950->
	Titolo	Inverse spectral and scattering theory : an introduction / / Hiroshi Isozaki
	Pubbl/distr/stampa	Gateway East, Singapore : , : Springer, , [2020] ©2020
	ISBN	981-15-8199-1
	Edizione	[1st ed. 2020.]
	Descrizione fisica	1 online resource (XII, 130 p. 2 illus.)
	Collana	SpringerBriefs in mathematical physics ; ; Volume 38
	Disciplina	515.7222
	Soggetti	Spectral theory (Mathematics)
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Chapter 1: One-dimensional inverse problems -- Chapter 2: Multi-dimensional inverse boundary value problems -- Chapter 3: Multi-dimensional Gel'fand-Levitan theory -- Chapter 4: Boundary control method -- Chapter 5: Other topics -- Index.
	Sommario/riassunto	The aim of this book is to provide basic knowledge of the inverse problems arising in various areas in mathematics, physics, engineering, and medical science. These practical problems boil down to the mathematical question in which one tries to recover the operator (coefficients) or the domain (manifolds) from spectral data. The characteristic properties of the operators in question are often reduced to those of Schrödinger operators. We start from the 1-dimensional theory to observe the main features of inverse spectral problems and then proceed to multi-dimensions. The first milestone is the Borg–Levinson theorem in the inverse Dirichlet problem in a bounded domain elucidating basic motivation of the inverse problem as well as the difference between 1-dimension and multi-dimension. The main theme is the inverse scattering, in which the spectral data is Heisenberg's S-matrix defined through the observation of the asymptotic behavior at infinity of solutions. Significant progress has been made in the past 30 years by using the Faddeev–Green function or the complex geometrical optics solution by Sylvester and Uhlmann, which made it possible to reconstruct the potential from the S-matrix of one fixed energy. One can also prove the equivalence of the knowledge of S-matrix and that

of the Dirichlet-to-Neumann map for boundary value problems in bounded domains. We apply this idea also to the Dirac equation, the Maxwell equation, and discrete Schrödinger operators on perturbed lattices. Our final topic is the boundary control method introduced by Belishev and Kurylev, which is for the moment the only systematic method for the reconstruction of the Riemannian metric from the boundary observation, which we apply to the inverse scattering on non-compact manifolds. We stress that this book focuses on the lucid exposition of these problems and mathematical backgrounds by explaining the basic knowledge of functional analysis and spectral theory, omitting the technical details in order to make the book accessible to graduate students as an introduction to partial differential equations (PDEs) and functional analysis. .

2.	Record Nr.	UNINA9910710519503321
	Autore	Schoonover Randall M
	Titolo	An investigation of a user-operated mass calibration package / / Randall M. Schoonover; James E. Taylor
	Pubbl/distr/stampa	Gaithersburg, MD : , : U.S. Dept. of Commerce, National Institute of Standards and Technology, , 1988
	Descrizione fisica	1 online resource
	Collana	NISTIR ; ; 88-3876
	Altri autori (Persone)	SchoonoverRandall M TaylorJames E
	Lingua di pubblicazione	Inglese
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	Note generali	1988. Contributed record: Metadata reviewed, not verified. Some fields updated by batch processes. Title from PDF title page.
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