

1. Record Nr.	UNINA9910823661503321
Autore	Megrabov A. G
Titolo	Forward and inverse problems for hyperbolic, elliptic, and mixed type equations // A.G. Megrabov
Pubbl/distr/stampa	Utrecht ; ; Boston : , : VSP, , 2003
ISBN	3-11-094498-7
Edizione	[Reprint 2012]
Descrizione fisica	1 online resource (242 pages) : illustrations
Collana	Inverse and Ill-Posed Problems Series ; ; 40 Inverse and ill-posed problems series
Classificazione	SK 560
Disciplina	242
Soggetti	Differential equations, Partial - Numerical solutions Inverse problems (Differential equations) - Numerical solutions
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references (pages [221]-230).
Nota di contenuto	Frontmatter -- Preface -- Contents -- Introduction -- Chapter 1. Inverse problems for semibounded string with the directional derivative condition given in the end -- Chapter 2. Inverse problems for the elliptic equation in the half-plane -- Chapter 3. Inverse problems of scattering plane waves from inhomogeneous transition layers (half-space) -- Chapter 4. Inverse problems for finite string with the condition of directional derivative in one end -- Chapter 5. Inverse problems for the elliptic equation in the strip -- Chapter 6. Inverse problems of scattering the plane waves from inhomogeneous layers with a free or fixed boundary -- Chapter 7. Direct and inverse problems for the equations of mixed type -- Chapter 8. Inverse problems connected with determination of arbitrary set of point sources -- Bibliography
Sommario/riassunto	Inverse problems are an important and rapidly developing direction in mathematics, mathematical physics, differential equations, and various applied technologies (geophysics, optic, tomography, remote sensing, radar-location, etc.). In this monograph direct and inverse problems for partial differential equations are considered. The type of equations focused are hyperbolic, elliptic, and mixed (elliptic-hyperbolic). The direct problems arise as generalizations of problems of scattering plane elastic or acoustic waves from inhomogeneous layer (or from

half-space). The inverse problems are those of determination of medium parameters by giving the forms of incident and reflected waves or the vibrations of certain points of the medium. The method of research of all inverse problems is spectral-analytical, consisting in reducing the considered inverse problems to the known inverse problems for the Sturm-Liouville equation or the string equation. Besides the book considers discrete inverse problems. In these problems an arbitrary set of point sources (emissive sources, oscillators, point masses) is determined.
