1. Record Nr. UNINA9910789092603321 Autore Belov Yu. Ya Titolo Inverse problems for partial differential equations / / Yu. Ya. Belov Pubbl/distr/stampa Utrecht, [The Netherlands]:,: VSP,, 2002 ©2002 **ISBN** 3-11-094463-4 Edizione [Reprint 2012] 1 online resource (219 p.) Descrizione fisica Inverse and III-Posed Problems Series Collana Disciplina 530.15/5353 Differential equations, Partial Soggetti Inverse problems (Differential equations) Mathematical physics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references. Nota di contenuto Frontmatter -- Preface -- Contents -- Chapter 1. Auxiliary information from functional analysis and theory of differential equations -- Chapter 2. The weak approximation method -- Chapter 3. Identification problems for parabolic equations with Cauchy data -- Chapter 4. The identification of the source function for a system of composite type and parabolic equation. The behavior of the problem's solution under t -> + -- Chapter 5. The problem of determining the coefficient in a parabolic equation and some properties of its solution -- Chapter 6. Two unknown coefficients of a parabolic type equation -- Chapter 7. Some inverse boundary value problems -- Bibliography Sommario/riassunto This monograph is devoted to identification problems of coefficients in equations of mathematical physics. It investigates the existence and uniqueness of the solutions for identification coefficient problems in parabolic and hyperbolic equations and equation systems of composite type. The problems are studied with the Cauchy data and equations in which the Fourier transform with respect to the chosen variable is supposed to occur. Differential properties of the solutions for the original direct problems and their behavior under great values of time are studied on the basis of solution properties for direct problems. The

identification problems with one or two unknown coefficients are also investigated. For initial boundary value conditions linear and nonlinear