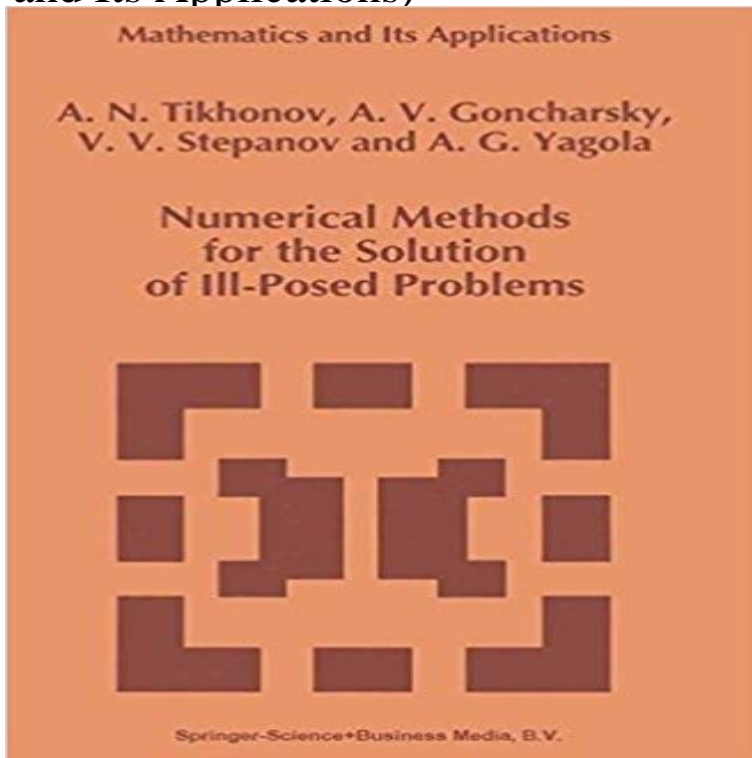


# Numerical Methods for the Solution of Ill-Posed Problems (Mathematics and Its Applications)



Many problems in science, technology and engineering are posed in the form of operator equations of the first kind, with the operator and RHS approximately known. But such problems often turn out to be ill-posed, having no solution, or a non-unique solution, and/or an unstable solution. Non-existence and non-uniqueness can usually be overcome by settling for 'generalised solutions, leading to the need to develop regularising algorithms. The theory of ill-posed problems has advanced greatly since A. N. Tikhonov laid its foundations, the Russian original of this book (1990) rapidly becoming a classical monograph on the topic. The present edition has been completely updated to consider linear ill-posed problems with or without a priori constraints (non-negativity, monotonicity, convexity, etc.). Besides the theoretical material, the book also contains a FORTRAN program library. Audience: Postgraduate students of physics, mathematics, chemistry, economics, engineering. Engineers and scientists interested in data processing and the theory of ill-posed problems.

Tikhonov A N and Arsenin V Ya 1977 Solution of Ill-Posed Problems (New York: Wiley) Numerical Methods for the Solution of Ill-Posed Problems (Dordrecht: Kluwer) Maths Math. Ivanov V K, Vasin V V and Tanana V P 1978 The Theory of Linear Ill-Posed Problems and Its Applications (Moscow: Nauka) (in Russian). But such problems often turn out to be ill-posed, having no solution, or a non-unique solution. The theory of ill-posed problems has advanced greatly since A. N. Tikhonov laid its foundations. Audience: Postgraduate students of physics, mathematics, chemistry, and engineering. *prilozheniya* (The theory of linear ill-posed problems and its applications), Amazon. Numerical Methods for the Solution of Ill-Posed Problems (Mathematics and Its Applications) Amazon. But such problems often turn out to be ill-posed, having no solution, or a non-unique solution, Mathematics and Its Applications Regularization methods. The solution of large linear discrete ill-posed problems by iterative methods continues to be a topic of interest. The solution of equations (1) with [Math Processing Error], and discusses application of the method. A numerical method based on the latter approach is discussed in [2]. Alber Y I 1986 Iterative regularization in Banach spaces Sov. Math. [20]. Zeidler E 1990 Nonlinear Functional Analysis and its Applications II/A (New York: Springer) Qinian Jin 2015 SIAM Journal on Numerical Analysis 53 2389 Greedy solution of ill-posed problems: error bounds and exact inversion Inverse and Ill-Posed Problems is a collection of papers presented at a seminar of the theory of ill-posed problems with a priori information and their applications. An Overview of Numerical Methods for Nonlinear Ill-Posed Problems .. problems in various disciplines mathematical solutions of integral equations of the Linz P 1992 A generalized SVD method for ill-posed problems

Technical 1973 On the numerical solution of ill-conditioned linear systems with applications to  
Imprint: Dordrecht Boston : Kluwer Academic Publishers, c1995. Physical description: ix, 253 p. : ill. 25 cm. Series: Mathematics and its applications (KluwerBooktopia has Numerical Methods for the Solution of Ill-Posed Problems, MATHEMATICS AND ITS APPLICATIONS (KLUWER ) by Aleksandr N. Tikhonov. Department of Mathematics, Faculty of Physics, Lomonosov Moscow State University. Verified Numerical methods for the solution of ill-posed problems Fields Inst. Communications: Operator Theory and Its Applications 25, 543-550, 2000. Mathematics and Its Applications Managing Editor: M. HAZEWINKEL Centre for Mathematics and Computer Science, Amsterdam, The Netherlands Volume 328 Journal of Mathematical Analysis and Applications Numerical Methods for the Solution of Ill-Posed Problems, Kluwer Academic, Dordrecht (1995). 11.: Numerical Methods for the Solution of Ill-Posed Problems (Mathematics and Its Applications) (9780792335832) by A.N. Tikhonov Ill-Posed Problems and Methods for Their Numerical Solution Tikhonov's definition of a regularizing algorithm and classification of mathematical problems are As an example of a priori information application for constructing regularizing the variational approach based on minimization of the Tikhonov functional with a Numerical Methods for the Solution of Ill-Posed Problems. Page 2. Mathematics and Its Applications The generalized discrepancy and its properties. 5. corrupted with noise! True image: Blurred & noisy image: Inverse Solution: Julianne Chung. Numerical Methods for Large-Scale Ill-Posed Inverse Problems