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Nota di contenuto	Frontmatter -- Preface -- Contents -- 1 The regularity condition. Newton's method -- 2 The Gauss-Newton method -- 3 The gradient method -- 4 Tikhonov's scheme -- 5 Tikhonov's scheme for linear equations -- 6 The gradient scheme for linear equations -- 7 Convergence rates for the approximation methods in the case of linear irregular equations -- 8 Equations with a convex discrepancy functional by Tikhonov's method -- 9 Iterative regularization principle -- 10 The iteratively regularized Gauss-Newton method -- 11 The stable gradient method for irregular nonlinear equations -- 12 Relative computational efficiency of iteratively regularized methods -- 13 Numerical investigation of two-dimensional inverse gravimetry problem -- 14 Iteratively regularized methods for inverse problem in optical tomography -- 15 Feigenbaum's universality equation -- 16 Conclusion -- References -- Index
Sommario/riassunto	Ill-posed problems are encountered in countless areas of real world science and technology. A variety of processes in science and engineering is commonly modeled by algebraic, differential, integral and other equations. In a more difficult case, it can be systems of equations combined with the associated initial and boundary

conditions. Frequently, the study of applied optimization problems is also reduced to solving the corresponding equations. These equations, encountered both in theoretical and applied areas, may naturally be classified as operator equations. The current textbook will focus on iterative methods for operator equations in Hilbert spaces.
