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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The Peaceman-Rachford Model Problem -- The Two-Variable ADI Problem -- Model Problems and Preconditioning -- Complex Spectra -- Lyapunov and Sylvester Matrix Equations -- MATLAB Implementation.
Sommario/riassunto	The ADI Model Problem presents the theoretical foundations of Alternating Direction Implicit (ADI) iteration for systems with both real and complex spectra and extends early work for real spectra into the complex plane with methods for computing optimum iteration parameters for both one and two variable problems. This book provides application of theory to the solution of boundary value problems and description of stable similarity reduction of a full matrix to low-band upper Hessenberg form, with application to computation of eigenvalues and solution of Lyapunov and Sylvester equations. Also included are MATLAB programs and numerical verification of theory and applications. This book also: Provides complete ADI theory for both real and complex spectra with one or two variables Includes application to Lyapunov and Sylvester equations of full or low rank Offers new similarity reduction of matrices from full to banded form Presents new application to low-rank control theory problems across a range of engineering disciplines Features MATLAB programs for implementation The ADI Model Problem is an ideal book for engineers in multiple disciplines interested in better understanding new ADI applications.