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Nota di contenuto	Introduction -- Solution Theory of Stochastic Maxwell Equations -- Intrinsic Properties of Stochastic Maxwell Equations -- Structure-Preserving Algorithms for Stochastic Maxwell Equations -- Convergence Analysis of Structure-Preserving Algorithms -- Implementation of Numerical Experiments -- Appendix A: Basic Identities and Inequalities -- Appendix B: Semigroup, Sobolev Space, and Differential Calculus -- Appendix C: Estimates Related to Maxwell Operators -- Appendix D: Some Results of Stochastic Partial Differential Equations -- References.
Sommario/riassunto	The stochastic Maxwell equations play an essential role in many fields, including fluctuational electrodynamics, statistical radiophysics, integrated circuits, and stochastic inverse problems. This book provides some recent advances in the investigation of numerical approximations of the stochastic Maxwell equations via structure-preserving algorithms. It presents an accessible overview of the construction and analysis of structure-preserving algorithms with an

emphasis on the preservation of geometric structures, physical properties, and asymptotic behaviors of the stochastic Maxwell equations. A friendly introduction to the simulation of the stochastic Maxwell equations with some structure-preserving algorithms is provided using MATLAB for the reader's convenience. The objects considered in this book are related to several fascinating mathematical fields: numerical analysis, stochastic analysis, (multi-)symplectic geometry, large deviations principle, ergodic theory, partial differential equation, probability theory, etc. This book will appeal to researchers who are interested in these topics.

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