

1. Record Nr.	UNISA996511862503316
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Titolo	Symplectic integration of stochastic Hamiltonian systems // Jialin Hong and Liying Sun
Pubbl/distr/stampa	Singapore : , : Springer, , [2022] ©2022
ISBN	981-19-7670-8
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (307 pages)
Collana	Lecture notes in mathematics ; ; Volume 2314
Disciplina	514.74
Soggetti	Hamiltonian systems Stochastic differential equations Symplectic groups Sistemes hamiltonians Equacions diferencials estocàstiques Grups simplèctics Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1 Deterministic Hamiltonian System -- Chapter 2 Stochastic Hamiltonian System -- Chapter 3 Stochastic Structure Preserving Numerical Integrators -- Chapter 4 Stochastic Modified Equation and Its Applications -- Chapter 5 Stochastic Hamiltonian Partial Differential Equation.
Sommario/riassunto	This book provides an accessible overview concerning the stochastic numerical methods inheriting long-time dynamical behaviours of finite and infinite-dimensional stochastic Hamiltonian systems. The long-time dynamical behaviours under study involve symplectic structure, invariants, ergodicity and invariant measure. The emphasis is placed on the systematic construction and the probabilistic superiority of stochastic symplectic methods, which preserve the geometric structure of the stochastic flow of stochastic Hamiltonian systems. The problems considered in this book are related to several fascinating research hotspots: numerical analysis, stochastic analysis, ergodic theory, stochastic ordinary and partial differential equations, and rough path

theory. This book will appeal to researchers who are interested in these topics.
