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Titolo	Semiclassical Analysis for Diffusions and Stochastic Processes [[electronic resource] /] / by Vassili N. Kolokoltsov
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Descrizione fisica	1 online resource (VIII, 356 p.)
Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 1724
Disciplina	519.23
Soggetti	Mathematical analysis Analysis (Mathematics) Probabilities Analysis Probability Theory and Stochastic Processes
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Formato	Materiale a stampa
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Note generali	Includes index.
Nota di contenuto	Gaussian diffusions -- Boundary value problem for Hamiltonian systems -- Semiclassical approximation for regular diffusion -- Invariant degenerate diffusion on cotangent bundles -- Transition probability densities for stable jump-diffusions -- Semiclassical asymptotics for the localised Feller-Courrège processes -- Complex stochastic diffusion or stochastic Schrödinger equation -- Some topics in semiclassical spectral analysis -- Path integration for the Schrödinger, heat and complex diffusion equations.
Sommario/riassunto	The monograph is devoted mainly to the analytical study of the differential, pseudo-differential and stochastic evolution equations describing the transition probabilities of various Markov processes. These include (i) diffusions (in particular,degenerate diffusions), (ii) more general jump-diffusions, especially stable jump-diffusions driven by stable Lévy processes, (iii) complex stochastic Schrödinger equations which correspond to models of quantum open systems. The main results of the book concern the existence, two-sided estimates, path integral representation, and small time and semiclassical asymptotics for the Green functions (or fundamental solutions) of these equations,

which represent the transition probability densities of the corresponding random process. The boundary value problem for Hamiltonian systems and some spectral asymptotics ar also discussed. Readers should have an elementary knowledge of probability, complex and functional analysis, and calculus. .