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Autore	Gatowski Sophia I
Titolo	Court performance measures in child abuse and neglect cases [[electronic resource]] : implementation guide / / Sophia I. Gatowski, Lisa Portune
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Descrizione fisica	1 online resource (ix, 53 pages) : illustrations
Altri autori (Persone)	PortuneLisa
Soggetti	Court administration - United States Child abuse - Law and legislation - United States Custody of children - United States
Lingua di pubblicazione	Inglese
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Titolo	Dirichlet Forms and Related Topics : In Honor of Masatoshi Fukushima's Beiju, IWDFRT 2022, Osaka, Japan, August 22–26 / / edited by Zhen-Qing Chen, Masayoshi Takeda, Toshihiro Uemura
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ISBN	981-19-4672-8
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (572 pages)
Collana	Springer Proceedings in Mathematics & Statistics, , 2194-1017 ; ; 394
Disciplina	519.2
Soggetti	Probabilities Markov processes Stochastic analysis Potential theory (Mathematics) Probability Theory Markov Process Stochastic Analysis Potential Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Preface -- List of Masatoshi Fukushima's Publications -- Contents -- Markov Uniqueness and Fokker-Planck-Kolmogorov Equations -- 1 Introduction and Framework -- 2 The Main Idea and a Parabolic Condition for Uniqueness -- 3 Some Uniqueness Results for FPKEs -- 3.1 Fokker-Planck-Kolmogorov Equations -- 3.2 Nondegenerate VMO Diffusion Coefficients -- 3.3 Nondegenerate Locally Lipschitz Diffusion Coefficients -- 3.4 Nondegenerate Diffusion Coefficients and the Lyapunov Function Condition -- 3.5 Degenerate Diffusion Coefficients -- 4 Applications to the Markov Uniqueness Problem -- 4.1 The Framework -- 4.2 Nondegenerate VMO Diffusion Coefficients -- 4.3 Nondegenerate Locally Lipschitz Diffusion Coefficients -- 4.4 Nondegenerate Diffusion Coefficients and Lyapunov Function Conditions -- 4.5 Degenerate Diffusion Coefficients -- References -- A Chip-Firing and a Riemann-Roch Theorem on an Ultrametric Space -- 1 Introduction -- 2 Laplacian and Riemann-Roch

Theorem on Ultrametric Space with Finite Vertices -- 3 Unification of Ultrametric Space with Finite Verteces -- 4 Riemann-Roch Theorem on Ultrametric Space with Countably Many Vertices -- References -- Hermitizable, Isospectral Matrices or Differential Operators -- 1 Hermitizable, Isospectral Matrices -- 2 Hermitizable, Isospectral Differential Operators -- References -- On Strongly Continuous Markovian Semigroups -- References -- Two-Sided Heat Kernel Estimates for Symmetric Diffusion Processes with Jumps: Recent Results -- 1 Introduction -- 2 Stability of Heat Kernel Estimates for Symmetric Diffusions with Jumps -- 2.1 Two-Sided Heat Kernel Estimates -- 2.2 Example -- 3 Symmetric Reflected Diffusions with Jumps in Inner Uniform Domains -- 3.1 Reflected Diffusions on Inner Uniform Domains -- 3.2 Reflected Diffusions with Jumps.
3.3 Heat Kernel Estimates for the beta Subscript asterisk Baseline less than or equals beta Superscript asterisk Baseline less than or equals normal infinity*le* leinfty in StartSet 0 Subscript plus Baseline EndSet union left parenthesis 0 comma normal infinity right bracket{0+}(0, infty] Case -- 3.4 Discussion on Off-Diagonal Heat Kernel Upper Bound -- 3.5 Example -- References -- On Non-negative Solutions to Space-Time Partial Differential Equations of Higher Order -- 1 Introduction -- 2 An Abstract Problem -- 3 Some Translation Invariant Pseudo-differential Operators -- 4 Some Discussions on the Case upper N equals 2N=2 -- 5 Higher Order Partial Differential Equations Admitting Non-negative Solutions -- References -- Monotonicity Properties of Regenerative Sets and Lorden's Inequality -- 1 Introduction -- 2 Lorden's Inequality -- 3 Monotone Potential Density -- 4 Concluding Remarks -- References -- Doob Decomposition, Dirichlet Processes, and Entropies on Wiener Space -- 1 Introduction -- 2 Doob Decomposition in Continuous Time -- 3 Entropies and Couplings on Wiener Space -- References -- Analysis on Fractal Spaces and Heat Kernels -- 1 Introduction -- 2 Classical Heat Kernel -- 3 Examples of Fractals -- 4 Dirichlet Forms -- 5 Walk Dimension -- 6 Besov Spaces and Characterization of beta -- 7 Dichotomy of Self-similar Heat Kernels -- 8 Estimating Heat Kernels: Strongly Local Case -- 9 Estimating Heat Kernels: Jump Case -- 10 Ultra-metric Spaces -- References -- Silverstein Extension and Fukushima Extension -- 1 Introduction -- 2 Silverstein Extensions -- 3 Fukushima Extensions -- 4 Examples of Fukushima Extensions -- 5 Fukushima Subspaces -- 6 Example: Revisit -- References -- Singularity of Energy Measures on a Class of Inhomogeneous Sierpinski Gaskets -- 1 Introduction -- 2 Framework and Statement of Theorems -- 3 Preliminary Lemmas.
4 Proof of the Main Results -- 5 Concluding Remarks -- References -- On upper L Superscript pLp Liouville Theorems for Dirichlet Forms -- 1 Introduction -- 2 Fukushima's Ergodic Theorem -- 3 Regular Dirichlet Forms and Harmonic Functions -- 3.1 Basic Notions and Intrinsic Metrics -- 3.2 Harmonic Functions -- 4 A Caccioppoli Inequality -- 5 Proof of Yau's and Karp's Theorem and Recurrence -- 5.1 Proof of Yau's and Karp's Theorem -- 5.2 Proof of the Growth Test for Recurrence -- References -- On Singularity of Energy Measures for Symmetric Diffusions with Full Off-Diagonal Heat Kernel Estimates II: Some Borderline Examples -- 1 Introduction -- 2 The Examples: Thin Scale Irregular Sierpiski Gaskets -- 3 Space-Time Scale Function upper Psi Subscript bold italic ll and fHKEfHKE left parenthesis upper Psi Subscript bold italic l Baseline right parenthesisfHKE(l) -- 4 Singularity of the Energy Measures -- 5 Realizing Arbitrarily Slow Decay Rates of upper Psi left parenthesis r right parenthesis divided by r squared(r)/r2 -- References -- Scattering Lengths for Additive Functionals and Their Semi-classical Asymptotics -- 1 Introduction -- 2 Scattering Length for

Additive Functionals -- 3 Kac's Scattering Length Formula -- 4 Semi-classical Asymptotics for Scattering Length -- References -- Equivalence of the Strong Feller Properties of Analytic Semigroups and Associated Resolvents -- 1 Introduction -- 2 Preliminaries -- 3 Equivalence of the Strong Feller Properties -- 4 Application to Markov Processes Associated with Lower Bounded Semi-Dirichlet Forms -- References -- Interactions Between Trees and Loops, and Their Representation in Fock Space -- 1 Framework and Definitions -- 2 Interaction Between Tree and Loops -- 3 Fock Spaces -- 4 Local Interaction in Supersymmetric Fock Space -- References -- Remarks on Quasi-regular Dirichlet Subspaces.
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2.2 Extensions of Positivity Preserving Operators -- 3 The Beurling-Deny Criteria, Excessive Functions and Extended Forms -- 3.1 Basics and Excessive Functions -- 3.2 The Extensions q Subscript eqe and q Superscript plusq+ -- 3.3 Invariant Sets and Irreducibilty -- 4 (Very) Weak and Abstract Poincaré and Hardy inequalities -- 5 From Weak Hardy Inequalities to Hardy Inequalities-Subcriticality -- 6 Weak Poincaré Inequalities and Completeness of Extended form Domains -- References -- Maximal Displacement of Branching Symmetric Stable Processes -- 1 Introduction -- 2 Symmetric Stable Processes -- 2.1 Resolvent Asymptotics -- 2.2 Spectral Properties of Schrödinger Type Operators with the Fractional Laplacian -- 2.3 Asymptotic Behaviors of Feynman-Kac Functionals -- 3 Maximal Displacement of Branching Symmetric Stable Processes -- 3.1 Branching Symmetric Stable Processes -- 3.2 Weak Convergence and Tail Asymptotics -- 3.3 Examples -- 4 Proof of Theorem 17 -- References -- Random Riemannian Geometry in 4 Dimensions -- 1 Random Riemannian Geometries and Conformal Invariance -- 2 Paneitz Energy on 4-Dimensional Manifolds -- 3 Co-biharmonic Gaussian Field and

Quantum Liouville Measure -- 3.1 Conformally Invariant Gaussian Field -- 3.2 Quantum Liouville Measure -- 4 Approximation by Random Fields and Liouville Measures on the Discrete 4-Torus -- 4.1 The Isotropic Haar System -- 4.2 The Semi-discrete Gaussian Field -- 4.3 The Semi-discrete Liouville Measure -- 4.4 Discrete Random Objects -- References -- Infinite Particle Systems with Hard-Core and Long-Range Interaction -- 1 Introduction -- 2 Preliminaries -- 2.1 Systems of Unlabeled Hard Balls -- 2.2 Systems of Labeled Balls -- 2.3 Skorohod Equation -- 3 Results -- 3.1 Existence of a Weak Solution -- 3.2 Statement of the Results -- 4 Proof of the Main Theorem -- 4.1 Finite Cluster Property.
4.2 On the Lipschitz Continuity of b Subscript bold italic upper X Superscript double struck upper IbXmathbbI.

Sommario/riassunto

This conference proceeding contains 27 peer-reviewed invited papers from leading experts as well as young researchers all over the world in the related fields that Professor Fukushima has made important contributions to. These 27 papers cover a wide range of topics in probability theory, ranging from Dirichlet form theory, Markov processes, heat kernel estimates, entropy on Wiener spaces, analysis on fractal spaces, random spanning tree and Poissonian loop ensemble, random Riemannian geometry, SLE, space-time partial differential equations of higher order, infinite particle systems, Dyson model, functional inequalities, branching process, to machine learning and Hermitizable problems for complex matrices. Researchers and graduate students interested in these areas will find this book appealing. Professor Masatoshi Fukushima is well known for his fundamental contributions to the theory of Dirichlet forms andsymmetric Markov processes.