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Introduction; 3.2. The Abstract Spectral Method - The Nondissipative Case; 3.3. The Abstract Spectral Method - The Dissipative Case; 3.4. The Wave Equation "Path-Integral" Propagator; 3.5. On The Existence of Wave-Scattering Operators; 3.6. Exponential Stability in Two-Dimensional Magneto-Elasticity: A Proof on a Dissipative Medium 3.7. An Abstract Semilinear Klein Gordon Wave Equation - Existence and UniquenessReferences; Appendix A. Exponential Stability in Two-Dimensional Magneto-Elastic: Another Proof; Appendix B. Probability Theory in Terms of Functional Integrals and the Minlos Theorem; Chapter 4. Nonlinear Diffusion and Wave-Damped Propagation: Weak Solutions and Statistical Turbulence Behavior.; 4.1. Introduction; 4.2. The Theorem for Parabolic Nonlinear Diffusion; 4.3. The Hyperbolic Nonlinear Damping; 4.4. A Path-Integral Solution for the Parabolic Nonlinear Diffusion 4.5. Random Anomalous Diffusion, A Semigroup ApproachReferences; Appendix A; Appendix B; Appendix C; Appendix D. Probability Theory in Terms of Functional Integrals and the Minlos Theorem - An Overview; Chapter 5. Domains of Bosonic Functional Integrals and Some Applications to the Mathematical Physics of Path-Integrals and String Theory; 5.1. Introduction; 5.2. The Euclidean Schwinger Generating Functional as a Functional Fourier Transform; 5.3. The Support of Functional Measures - The Minlos Theorem; 5.4. Some Rigorous Quantum Field Path-Integral in the Analytical Regularization Scheme 5.5. Remarks on the Theory of Integration of Functionals on Distributional Spaces and Hilbert-Banach Spaces

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Sommario/riassunto

Functional analysis is a well-established powerful method in mathematical physics, especially those mathematical methods used in modern non-perturbative quantum field theory and statistical turbulence. This book presents a unique, modern treatment of solutions to fractional random differential equations in mathematical physics. It follows an analytic approach in applied functional analysis for functional integration in quantum physics and stochastic Langevin-turbulent partial differential equations. An errata II to the book is available. [Click here to download the pdf.](#)

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