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Poisson noise; 4.4 Linear processes; 4.5 L evy field and generalized L evy field; 4.6 Gaussian elemental noises; 5. Harmonic analysis arising from infinite dimensional rotation group; 5.1 Introduction; 5.2 Infinite dimensional rotation group O(E); 5.3 Harmonic analysis; 5.4 Addenda to the diagram
5.5 The L evy group, the Windmill subgroup and the sign-changing subgroup of O(E)5.6 Classification of rotations in O(E); 5.7 Unitary representation of the infinite dimensional rotation group O(E); 5.8 Laplacian; 6. Complex white noise and infinite dimensional unitary group; 6.1 Why complex?; 6.2 Some background; 6.3 Subgroups of U (Ec); 6.4 Applications; I. Symmetry of the heat equation and the Schr odinger equation.; II. Analysis on half plane of E; 7. Characterization of Poisson noise; 7.1 Preliminaries; 7.2 A characteristic of Poisson noise; 7.3 A characterization of Poisson noise
7.4 Comparison of two noises Gaussian and Poisson; 7.5 Poisson noise functionals; 8. Innovation theory; 8.1 A short history of innovation theory; 8.2 Definitions and examples; 8.3 Innovations in the weak sense; 8.4 Some other concrete examples; 9. Variational calculus for random fields and operator fields; 9.1 Introduction; 9.2 Stochastic variational equations; 9.3 Illustrative examples; 9.4 Integrals of operators; 9.4.1 Operators of linear form; 9.4.2 Operators of quadratic forms of the creation and the annihilation operators; 9.4.3 Polynomials in R; of degree 2
10. Four notable roads to quantum dynamics

Sommario/riassunto

White noise analysis is an advanced stochastic calculus that has developed extensively since three decades ago. It has two main characteristics. One is the notion of generalized white noise functionals, the introduction of which is oriented by the line of advanced analysis, and they have made much contribution to the fields in science enormously. The other characteristic is that the white noise analysis has an aspect of infinite dimensional harmonic analysis arising from the infinite dimensional rotation group. With the help of this rotation group, the white noise analysis has explored new are