Quantum Stochastic Processes And Noncommutative Geometry

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Details the interaction between the two vigorous fields of non-commutative geometry and quantum stochastic processes.The classical theory of stochastic processes has important applications arising from the need to describe irreversible evolutions in classical mechanics, analogously quantum stochastic processes can be used to model the dynamics of irreversible quantum systems. Noncommutative, i.e. quantum, geometry provides a framework in which quantum stochastic structures can be explored. This book is the first to describe how these two mathematical constructions are related. In particular, key ideas of semigroups and complete positivity are combined to yield quantum dynamical semigroups (QDS). Sinha and Goswami also develop a general theory of Evans-Hudson dilation for both bounded and unbounded coefficients. The unique features of the book, including the interaction of QDS and quantum stochastic calculus with noncommutative geometry and a thorough discussion of this calculus with unbounded coefficients, will make it of interest to graduate students and researchers in functional analysis, probability and mathematical physics. EAN/ISBN : 9780511267093 Publisher(s): Cambridge University Press Format: ePub/PDF Author(s): Sinha, Kalyan B. - Goswami, Debashish

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