QUANTUM LAPLACIANS ON GENERALIZED OPERATORS ON BOSON FOCK SPACE

**Luigi Accardi
Abdessatar Barhoumi
Un Cig Ji**

Abstract: By adapting the white noise theory, the quantum analogues of the (classical) Gross Laplacian and Lévy Laplacian, so called the quantum Gross Laplacian and quantum Lévy Laplacian, respectively, are introduced as the Laplacians acting on the spaces of generalized operators. Then the integral representations of the quantum Laplacians in terms of quantum white noise derivatives are studied. Correspondences of the classical Laplacians and quantum Laplacians are studied. The solutions of heat equations associated with the quantum Laplacians are obtained from a normal-ordered white noise differential equation.

THE FULL TEXT IS AVAILABLE HERE