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Kuo's Fourier-Mehler transform and the Lévy Laplacian.

In this talk we present recent results on a role of the Lévy Laplacian in the infinite dimensional stochastic analysis. We discuss some stochastic process associated with the Laplacian and consider an operator from regular white noise functionals into functionals of exponential white noise. The operator gives several relationships between the Beltrami Laplacian, the Gross Laplacian and the Lévy Laplacian. The Kuo's Fourier-Mehler transform is also connected with the Lévy Laplacian by the operator. Moreover the operator implies a Gauss-Poisson correspondence if we consider the Lévy Laplacian acting on multiple Wiener integrals by some Lévy process. (Received September 23, 2006)