Calculus in Infinite Dimensional Probability Spaces.
From Gauss to Poisson

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In contrast to what one often sees e.g. in the physics literature, the concept of Lebesgue measure $d^n x$ and the corresponding integration theory do not have a viable extension to the infinite dimensional case $n = \infty$. Gaussian White Noise Analysis (AMS Mathematics Subject Classification: 60H40) is a substitute which preserves many of the desirable properties of the Lebesgue measure and integral.

We give an outline of white noise based calculus, some applications, and its relation to Ito calculus. Finally we will indicate an important isomorphism to an analogous construct based on an infinite dimensional Poisson measure.

This submission is for a invited session