Stochastic Analysis of Gaussian Processes via Fredholm Representation

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Time **Thursday, March 12, 2015 at 16:00**
Place **Campus Kirchberg, room B04**

In this talk we show that every separable Gaussian process X on $[0, T]$ with integrable variance function admits a Fredholm integral representation with respect to a standard Brownian motion. This representation can be extended to a transfer principle, and by using the transfer principle one can develop stochastic calculus with respect to the process X. More precisely, the transfer principle is used to define multiple Wiener integrals, Malliavin derivative, and divergence integral. As such, the results provide a general approach to the stochastic calculus with respect to Gaussian processes. Examples and applications are discussed.