

MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

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Stochastic integration in Banach spaces and radonifying operators

One of the cores in modern probability theory is the stochastic integral introduced by K. Ito in the 1940s. Due to the randomness and the irregularity of typical stochastic integrators (such as the Wiener process) one can not follow a classical approach as in calculus to define the stochastic integral.

For Hilbert spaces Ito's theory of stochastic integration in finite dimensions can be generalised. There are several even quite early attempts to tackle stochastic integration in more general spaces such as Banach spaces but none of them provides the generality and powerful tool as the theory in Hilbert spaces.

In this talk, we begin with introducing the stochastic integral in Hilbert spaces based on the classical theory and with explaining the restriction of this approach to Hilbert spaces. We tackle the problem of stochastic integration in Banach spaces by introducing a stochastic version of a Pettis integral. In the case of a Wiener process as an integrator, the stochastic Pettis integrability of a function is related to the extensively studied class of γ -radonifying operators. Surprisingly, it turns out that for more general integrators which are non-Gaussian and discontinuous (Levy processes) such a relation can still be established but with another subclass of radonifying operators.

Zeit: **Mittwoch, den 20. Juli 2011 um 10.00 Uhr**

Ort: **Victor-Franz-Hess Haus, Technikerstraße 25, HS F**

Gäste sind herzlich willkommen!

Christel & Stefan Geiß