



Universität Ulm | 89069 Ulm | Germany

Fakultät für Mathematik und  
Wirtschaftswissenschaften  
Institut für Stochastik

**Prof. Dr. Evgeny Spodarev**

Helmholtzstr. 18  
89081 Ulm, Germany

Tel: +49 731 50-23530  
Fax: +49 731 50-23649  
[evgeny.spodarev@uni-ulm.de](mailto:evgeny.spodarev@uni-ulm.de)  
<http://www.uni-ulm.de/stochastik>

14. Oktober 2013

## Einladung zum Vortrag

von

**Dr. Georgiy Shevchenko**

TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV

### Fractional integral representation of random variables

Dudley showed that any functional  $\xi$  of a standard Wiener process  $W = \{W_t, t \in [0, 1]\}$  can be represented as an Itô stochastic integral  $\int_0^1 \psi_t dW_t$ , where  $\psi$  is adapted to the natural filtration of  $W$  and  $\int_0^1 \psi_t^2 dt < \infty$  a.s. On the other hand, under an additional assumption  $\int_0^1 E\psi_t^2 dt < \infty$ , only centered random variables with finite variances can be represented in this form and moreover  $\psi$  is unique in this representation.

In my talk I will discuss similar questions for fractional Brownian motion. In particular, I will give both necessary and sufficient conditions for a random variable to be a stochastic integral with respect to fractional Brownian motion. I will also discuss several implications of these results for the fractional financial market model.

**Termin:** Dienstag, 22. Oktober 2013, 10:00 Uhr

**Ort:** Universität Ulm, Helmholtzstr. 18, Raum 220

Interessenten sind herzlich eingeladen. Der Vortrag findet im Rahmen unseres Forschungsseminars statt.

gez. E. Spodarev