

STANFORD UNIVERSITY
DEPARTMENT OF STATISTICS
DEPARTMENTAL SEMINAR

4:15 p.m., Tuesday, June 24, 2008
Sequoia Hall Room 200
(Cookies at 3:45 in 1st Floor Lounge)

Mark Podolskij
Post.doc. at CREATES
Aarhus University

Power variation for Gaussian processes with stationary increments

We develop the asymptotic theory for the realised power variation of the processes $X = \phi * G$, where G is a Gaussian process with stationary increments. More specifically, under some mild assumptions on the variance function of the increments of G and certain regularity condition on the path of the process ϕ we prove the convergence in probability for the properly normalised realised power variation. Moreover, under a further assumption on the Hölder index of the path of ϕ , we show an associated stable central limit theorem. The main tool is a general central limit theorem, due essentially to Hu & Nualart (2005), Nualart & Peccati (2005) and Peccati & Tudor (2005), for sequences of random variables which admit a chaos representation.