

SEMINAR OF ACTUARIAL AND FINANCIAL MATHEMATICS

organized by Quantact, the CRM Laboratory of Actuarial and Financial Mathematics

Concordia University
Pavillon J.W. McConnell (Library) Building
LB 921-4
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Johannes Muhle-Karbe

Department of Mathematics, University of Michigan, Ann Arbor

Trading with Small Nonlinear Price Impact

We study portfolio choice with nonlinear price impact in a general setting. Using probabilistic techniques, we show that the limiting control problem for small price impact can be reduced to the ergodic control of an OU-type process with nonlinear mean-reversion speed. This problem can be solved explicitly up to a single nonlinear ODE, which identifies the optimal trading speed and the welfare loss due to the trading friction. Previous asymptotic results for proportional and quadratic trading costs are obtained as particular limiting cases.

Website: http://quantact.uqam.ca/index_en.html