PUBLICATIONS of Esko Valkeila

December 27, 2010

Mathematical publications

Journals with a referee system

1. *Valkeila, E.* (1982): A general Poisson approximation theorem, Stochastics, **7**: 151-171.

2. Nikunen, M. and *Valkeila, E.* (1984): A note on one-dimensional distances between two counting processes, Theory of Probability and its Applications, **29**: 558-561.

3. *Valkeila, E.* (1984): Remarks on counting processes with independent increments, Commentationes Physico-Mathematicae 60.

4. *Valkeila, E.* and Vostrikova, L. (1986): An integral representation for the Hellinger distance, Mathematica Scandinavica, **58**: 239-254.

5. *Valkeila, E.* and Vostrikova, L. (1987): On predictable tests of (c_n)–consistency of estimates, Theory of Probability and its Applications, **32**: 477-489.

6. Dzhaparidze, K. and *Valkeila, E.* (1990): On the Hellinger type distances for filtered experiments, Probability Theory and Related Fields, **85**: 105 – 118.

7. Nikunen, M. and *Valkeila, E.* (1991): A Prohorov bound for a Poisson process and an arbitrary counting process with some applications, Stochastics and Stochastic Reports, **37**: 133-151.

8. *Valkeila, E.* (1995): On normal approximation of a process with independent increments, Russian Mathematical Surveys, **50**: 945-961.

9. Norros, I., *Valkeila, E.* and Virtamo, J. (1999): An elementary approach to a Girsanov formula and other analytical results on fractional Brownian motions Bernoulli, **5**, 571 -587.

10. Novikov, A. and *Valkeila, E.* (1999): On some maximal inequalities for fractional Brownian motions, Statistics & Probability Letters, **44**, 47 -54.

11. *Valkeila, E.* and Melnikov, A. (1999): Martingale models for stochastic approximation and their convergence, Theory of Probability and its Applications, **44**, 278-311 (in russian).

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14. Mémin, J., Mishura, Y. and *Valkeila, E.* (2001): Inequalities for the moments of Wiener integrals with respects to a fractional Brownian motion. Statistics & Probability Letters **51**, 197-206.

15. Mishura, Y. and *Valkeila, E.* (2001): Martingale transforms and Girsanov theorem for long-memory Gaussian processes. Statistics & Probability Letters **55**, 421-430.

16. Delbaen, F., Kabanov, Y. and *Valkeila, E.* (2002): Hedging under transaction costs in currency markets: a discrete-time model. Mathematical Finance, **12**, 45-61.

17. Dzhaparidze, K. Spreij, P. and *Valkeila, E.* (2002): Information concepts in filtered experiments. Theory of Probability and Mathematical Statistics **67**, 38-56.

18. Dzhaparidze, K. Spreij, P. and *Valkeila, E.* (2003): Information processes for semimartingale experiments. Annals of Probability **31**, 216-243.

19. Sottinen, T. and *Valkeila, E.* (2003): On arbitrage and replication in the fractional Black-Scholes pricing model. Statistics & Decisions, **21**, 137-151.

20. Gushchin A. A. and *Valkeila, E.* (2003): Approximations and limit theorems for log-likelihood processes in the binary case. Statistics & Decisions, **21**, 219-260.

21. Kukush, A., Mishura, Y. and *Valkeila, E.* (2005): Statistical inference with fractional Brownian motion. Statistical Inference for Stochastic Processes, **8**, 71-93.

22. Bender,C., Sottinen, T., and *Valkeila, E.* (2008): Pricing by hedging and no-arbitrage beyond semimartingales. Finance and Stochastics, **12**, 441-468.

23. Azmoodeh, E., Mishura, Y., and *Valkeila, E.* (2009): On hedging European options in geometric fractional Brownian motion market model. Statistics & Decisions, **27**, 129-134.

24. Mishura, Y., and *Valkeila, E.* (2010): An extension of the Lévy characterization to fractional Brownian motion Annals of Probability, forthcoming.

25. Azmoodeh, E., Tikanmäki, H., and *Valkeila, E.* (2010). When does fractional Brownian motion not behave as a continuous function with bounded variation. Statistics and Probability Letters, **80**, 1543?1550.

26. Gasbarra, D., Morlanes, J.I., and *Valkeila, E.* (2010). Initial enlargement in a Markov Chain Market Model. Stochastics and Dynamics, forthcoming.

27. Gapeev, P-V., Sottinen, T., and *Valkeila, E.* (2010). Robust replication in H-self-similar Gaussian market models under uncertainty. Sttatistics & Decisions, forthcoming.

Book chapters

28. Bender, C., Sottinen, T., and *Valkeila, E.* (2010): Fractional Processes as Models in Stochastic Finance. Advanced Mathematical Methods for Finance (Eds. G. Di Nunno and B. Oksendal, in Series in Mathematical Finance, Springer, forthcoming.

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29. Nikunen, M. and *Valkeila, E.* (1988): On the Levy-Prohorov distances between counting processes. Proceedings of the First Finnish-Soviet Symposium in Probability Theory and Mathematical Statistics, Ann. Acad.Sci.Fenn. Ser. A.I., **13**: 255 –258.

30. Nikunen, M. and *Valkeila, E.* (1985): On metric distances between two counting processes, in. Krylov, Liptser and Novikov (ed.) Statistics and control of random processes, New York, pp. 377-388.

31. Dzhaparidze, K. and *Valkeila, E.* (1989): On large deviation probabilities for the maximum likelihood estimators, Probability Theory and Mathematical Statistics Vol. 1 (eds. Grigelionis, B. et. al.), 285 -292.

32. *Valkeila, E.* (1993): A note on the convergence of moments and the martingale CLT, Proceedings of the Second Finnish-Soviet Symposium in Probability Theory and Mathematical Statistics (eds. A.V. Melnikov, H. Niemi, A.N. Shiryaev and *E. Valkeila*). Ann. Acad. Sci. Fenn. Ser. A.I. Mathematica, **17**, 139-149.

33. Melnikov,A.V., Rodkina, A.E. and *Valkeila, E.* (1993): On a general class of stochastic approximation algorithms. Proceedings of the Third Finnish-Soviet Symposium on Probability Theory and Mathematical Statistics (eds. H. Niemi, G. Högnas, A.N. Shiryaev and A.V. Melnikov). Frontiers in Pure and Applied Probability, **1**: 183 - 196.

34. *Valkeila, E.* (1996): A note on large deviation probabilities for the maximum likelihood estimator in filtered experiments. Proceedings of the Fourth Finnish-Soviet Symposium on Probability Theory and Mathematical Statistics (eds. A.N. Shiryaev, A.V. Melnikov, H. Niemi and *E. Valkeila*). Frontiers in Pure and Applied Probability, **8**: 207-216.

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36. Dzhaparidze, K., Spreij, P. and *Valkeila, E.* (1997): On Hellinger Processes for Parametric Families of Experiments. Statistics and Control of Stochastic Processes. The Liptser Festschrift. (eds. Yu. Kabanov, B. Rozovskii and A. Shiryaev) World Scientific, Singapore, 41-62.

37. Gushchin, A.A. and *Valkeila, E.* (2001): Exponential Approximation of Statistical Experiments, in Asymptotic Methods in Probability and Statistics with Applications, Balakrishnan, N. et.al (ed), Birkhäuser, pp.409 - 423.

38. Mishura, Yu. S. and *Valkeila, E.* (2002): On the absence of arbitrage in the mixed Brownian-fractional Brownian market model. Proceedings of the Steklov Institute of Mathematics, **237**, 215-224.

39. Shiryaev, A.N., *Valkeila, E.* and Vostrikova, L. (2002): About characterization of lower and upper functions for square-integrable martingales. Proceedings of the Steklov Institute of Mathematics, **237**, 281-292.

40. Gasbarra, D. and *Valkeila, E.* (2004): Initial enlargement: a Bayesian approach. Theory of Stochastics Processes, **9**, 26-37.

41. Gasbarra, D., *Valkeila, E.*, and Vostrikova, L. (2006): Enlargement of filtration and additional information in pricing models: a Bayesian approach. in From Stochastic Calculus to Mathematical Finance, The Shiryaev Festschrift (ed.:Y. Kabanov, R. Liptser and J. Stoyanov), Springer, 257-286.

42. Gasbarra, D., Sottinen, T., and *Valkeila, E.* (2007): Gaussian bridges. in Proceedings of the Abel symposium 2005. Stochastic Analysis and Applications (ed.: Fred Espen Benth, Giulia Di Nunno, Tom Lindstrøm, Bernt Øksendal, and Tusheng Zhang), Springer, 361-382.

43. Bender,C., Sottinen, T., and *Valkeila, E.* (2007): Arbitrage with fractional Brownian motion. Theory of Stochastic Processes, **13**, 23-34.

44. *Valkeila, E.* (2009): On the approximation of geometric fractional Brownian motion. in Optimality and Risk - Modern Trends in Mathematical Finance: The Kabanov Festschrift (ed.: Delbaen, Freddy; Rásonyi, Miklós; Stricker, Christophe), Springer, 251-266.

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45. Azmoodeh, E., and *Valkeila, E.* (2010). Spectral characterization for the quadratic variation of mixed Brownian fractional Brownian motion. Submitted.

Other mathematical publications

45. *Valkeila, E.* (1980): Maksimientropiamenetelmä tehospektrin estimoinnissa. Helsingin yliopisto, seismologian laitos. Raportti T-10, Helsinki, 12 pages (in finnish).

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47. *Valkeila, E.* (1991): Computer algebra and stochastic analysis, some possibilities, CWI-Quarterly, **4**: 229-238.

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49. *Valkeila, E.* (1998): Rahoituksen matematiikkaa (in finnish), Solmu 2/1998-1999, 6-9.

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51. *Valkeila, E.* (2004): Aika ja sattuman matematiikka, Arkhimedes, no.3, 14-17.

52. Norros, I. and *Valkeila, E.* (2004): Uhkapeli loi todennäköisyyslaskennan, Helsingin Sanomat, 10.8. 2004

Other publications – journals

53. Aho, K.,Gordin, A., Palosuo, T. Punsar, S., *Valkeila, E.*, Karvonen, M., Inkovaara, J. and Pasternack, A. (1984): Thyroid autoimmunity and cardiovascular diseases, European Heart Journal, **5**: 43-46.

54. Virtamo, J., *Valkeila, E.*, Alfthan, G., Punsar, S., Huttunen, J.K. and Karvonen, M.J. (1985): Serum selenium and the risk of coronary heart disease and stroke, American Journal of Epidemiology, **122**: 276-282.

55. Virtamo, J., *Valkeila, E.*, Alfthan, G., Punsar, S., Huttunen, J.K. and Karvonen, M.J. (1987): Serum selenium and the risk of cancer, Cancer, **60**: 145-148.

56. Nohynek, H., *Valkeila, E.*, Leinonen, M. and Eskola, J. (1995): Erythrocyte sedimentation rate, white blood cell count and serum C-reactive protein in assessing etiologic diagnosis of acute lower respiratory infections in children, Pediatric Infectious Diseases Journal, **6**: 484-490.

57. Hämäläinen, M.L., Hoppu, K., *Valkeila, E.* and Santavuori, P. (1997): Ibuprofen or acetaminophen for the acute treatment of migraine in children: A double-blind, randomized, placebo controlled crossover study, Neurology, **48**: 103-107.

58. Mälkki-Laine, L. and *Valkeila, E.* (1998): Application of regression transformations to the determination of reaction orders in stability studies. International Journal of Pharmaceutics, **161**: 29-35.