



- best research paper, 2000
6. Economic Education and Research Consortium- Russia (EERC) grant "Money-search-and-barter models of financial stabilization", 1999 (research team 2 people)
  7. Economic Education and Research Consortium- Russia (EERC) grant "Principles of the assessment of the investment projects under uncertainty of Transition", 1997 (research team 2 people)
  8. Russian Humanitarian-Scientific Fund "Principles of the assessment of the investment projects under uncertainty of Transition", 1996-1997 (research team 2 people)
  9. Russian Fund for Fundamental Research "Spectral properties of differential operators in domains with singularities" 1996-1997 (research team 5 people)
  10. Deutsche Forschungsgemeinschaft grant, June 1996 International Scientific Fund grant (Soros grant)
  11. "Precise spectral asymptotics for perturbed Schrödinger operators" 1995 (research team 4 people)
  12. International Scientific Fund grant (Soros grant) "Precise spectral asymptotics for perturbed Schrödinger operators" 1994 (research team 5 people)
  13. Grant CERC October-November 1994
  14. Volkswagen grant, March-April 1994
  15. Grant of the Royal Society, November 1992-November 1999

**MONOGRAPHS AND CHAPTERS IN MONOGRAPHS PUBLISHED** (the complete list of publications can be found at <http://www.eco.utexas.edu/~leven>)

1. S. Boyarchenko and S. Levendorskiĭ, Irreversible Decisions under Uncertainty (Optimal Stopping made Easy), Springer-Verlag, Berlin, 2007, xvi+283 pp.
2. S. Boyarchenko and S. Levendorskiĭ, Non-Gaussian Merton-Black-Scholes theory, World Scientific, Singapore, 2002, xxi+398 pp.
3. S. Levendorskiĭ, Degenerate elliptic equations. Mathematics and its Applications, 258. Kluwer Academic Publishers Group, Dordrecht, 1993, xii+431 pp.
4. S. Levendorskiĭ Asymptotic distribution of eigenvalues of differential operators. Translated from the Russian. Mathematics and its Applications (Soviet Series), 53. Kluwer Academic Publishers Group, Dordrecht, 1990, xviii+279 pp.
5. S. Levendorskiĭ and B. Paneyakh, Degenerate elliptic equations and boundary value problems. In Encyclopedia of Mathematical Sciences, v.63, 131-202, Springer-Verlag, 1994

**MAIN RESULTS AND CURRENT RESEARCH (MATHEMATICAL FINANCE AND ECONOMICS)**

1. Construction of the *extended Koponen family of Lévy processes* used later under the name *CGMY-model*; explicit formula for locally risk minimizing hedging; pricing of perpetual American options and Carr's randomization procedure for more general dependence of the pay-off on the stochastic factor than in standard models; equivalently, efficient pricing procedures for processes with mean-reverting and switching features; similar results in discrete time; proof of the failure of the smooth pasting condition for finite variation processes; pricing of barrier options; new general approach to optimal stopping problems; optimal stopping problems for sequences of embedded options, of an arbitrary length; pricing of wide classes of options in regime-switching Lévy models and models with stochastic interest rates and stochastic volatility; analysis of impact of policy interventions (with S. Boyarchenko)
2. Explanation of hyperbolic discounting and other discounted utility anomalies based on the real options approach; endogenous discount factors used in the decision-making as opposed to discount factors used when no decision is involved (with S. Boyarchenko)
3. Computationally efficient pricing of American options under diffusions with exponentially distributed jumps.
4. Proof that for processes with jumps, the early exercise boundary for the American put is separated from the strike by a non-vanishing margin.
5. Study of the dependence of the behavior of option prices near the barrier on the type of the jump component.
6. New fast and accurate finite difference scheme for pricing of American options with finite time horizon (with O. Kudryavtsev and V. Zherder)
7. Numerical method for European options, that is faster and more accurate than Fast Fourier Transform, especially for out-of-the-money options (with V. Zherder); the advantage in the multi-factor case should be even greater.
8. Consistency conditions for affine term structure models (ATSM), and justification of the use of the

- Feynman-Kac theorem in ATSM; equivalently, the proof of the Feynman-Kac theorem for degenerate elliptic operators with non-semibounded potentials
9. Construction of the first class of quadratic term structure models (QTSM) under processes with jumps
  10. Eigenfunction expansion method in multi-factor models. Construction of exactly solvable multi-factor mean-reverting models, ATSM and QTSM, the models in random time and the ones with embedding jumps including (with Nina Boyarchenko)
  11. Estimating equations for a class of time-irreversible multi-factor models (with Nina Boyarchenko)
  12. Two efficient numerical procedures for Barrier options and American options in Lévy models (with O.Kudryavtsev)
  13. Refinement of FFT with applications to pricing barrier and double barrier options and calculating their sensitivities (with Mitya Boyarchenko)

## **PUBLICATIONS IN MATHEMATICAL FINANCE AND ECONOMICS**

1. Irreversible Decisions under Uncertainty (Optimal Stopping made Easy) (with S.~Boyarchenko), *Springer Verlag*, Berlin, 2007 <http://www.eco.utexas.edu/~leven/bookOSMEshort.pdf>
2. Non-Gaussian Merton-Black-Scholes Theory (with S.~Boyarchenko), *World Scientific*, Singapore 2002
3. Fast and accurate pricing of barrier options under Lévy processes (with Oleg Kudryavtsev), to appear in Special Issue of *Finance and Stochastics*
4. American options in Lévy models with stochastic interest rates, to appear in *Computational Finance*
5. American and European Options in Multi-Factor Jump-Diffusion Models, Near Expiry, *Finance and Stochastics*, 12:4 (2008), pp.~541-560
6. American options in regime-switching models with non-semibounded stochastic interest rates (with Svetlana Boyarchenko), Proceedings of 2008 American Control Conference} (2008), pp.~1023--1028.
7. Exit Problems in Regime-Switching Models (with Svetlana Boyarchenko), *Journ. of Mathematical Economics* 44:2 (2008), 180-206
8. The eigenfunction expansion method in multi-factor quadratic term structure models (with N.Boyarchenko), *Mathematical Finance* 17, No. 4 (2007), pp.503–539 <http://ssrn.com/abstract=874839>
9. On errors and bias of Fourier transform methods in quadratic term structure models (with N.Boyarchenko), *International Journal of Theoretical and Applied Finance* 10, No. 2 (2007) 273-306 <http://ssrn.com/abstract=874835>
10. Optimal stopping made easy (with Svetlana Boyarchenko), *Journ. of Mathematical Economics*, **43**:2 (2007), pp. 201-217 <http://ssrn.com/abstract=610621>
11. General option exercise rules, with applications to embedded options and monopolistic expansion (with Svetlana Boyarchenko) *Contributions to Theoretical Economics*, 6:1, Article 2 (2006) <http://ssrn.com/abstract=838624>
12. Consistency conditions for Affine Term Structure Models II. Option pricing under diffusions with embedded jumps, *Annals of Finance* (2006), 2:2, 207-224 <http://ssrn.com/abstract=627622>
13. The relative efficiency of numerical methods for pricing American options under Lévy processes (with O.Kudryavtsev and V.Zherder), *Journal of Computational Finance*, 9, Winter 2005/06, 69-98 <http://ssrn.com/abstract=610542>
14. Pricing of first touch digitals under Normal Inverse Gaussian processes (with O.E.Kudryavzev), *International Journal of Theoretical and Applied Finance*, Vol. 9, No. 6 (2006) 915-949 <http://ssrn.com/abstract=520045>
15. American options: the EPV pricing model (with S.I.Boyarchenko), *Annals of Finance* (2005), 1, 267--292. <http://ssrn.com/abstract=547863>
16. The practical guide to real options in discrete time (with S.I.Boyarchenko), *International Economic Review* 48:1 (2007), 275--306. <http://ssrn.com/abstract=642262>
17. Pseudo-diffusions and Quadratic Term Structure Models; *Mathematical Finance* (2005), 15, 393-424. <http://ssrn.com/abstract=520044>
18. Early exercise boundary and option pricing in Lévy driven models, *Quantitative Finance*, 4 (2004), 525-547 <http://www.eco.utexas.edu/~leven/qfinrev2a.pdf>
19. Consistency conditions for affine term structure models, *Stochastic Processes and Their Applications* 109 (2004), 225-261 [pdf file](#)
20. Pricing of the American put under Lévy processes, *International Journal of Theoretical and Applied Finance* 7:3 (2004), 303-336 [pdf file](#)
21. Pricing of perpetual Bermudan options (with S.I. Boyarchenko), *Quantitative Finance*, 2 (2002), 422-432

- <http://www.eco.utexas.edu/~leven/bermud3.pdf>
22. Barrier Options and Touch-and-out Options under regular Lévy processes of Exponential Type (with S.I. Boyarchenko), *Annals of Applied Probability*, 12:4 (2002), 1261--1298. [pdf file](#)
  23. Perpetual American options under Lévy processes, *SIAM Journal on Control and Optimization* (with S.I. Boyarchenko), 40:6 (2002), 1663--1696 [pdf file](#)
  24. Feller Processes of Normal Inverse Gaussian Type (with Ole E. Barndorff-Nielsen), *Quantitative Finance*, 1 (2001), 318-331 [pdf file](#)
  25. Option pricing and hedging under regular Lévy Processes of exponential type (with S.I. Boyarchenko), In: *Trends in Mathematics. Mathematical Finance*, M.Kohlman and S.Tang, eds. (2001), pp.121-130 [pdf file](#)
  26. Option Pricing for Truncated Lévy processes (with S.I. Boyarchenko), *International Journal of Theoretical and Applied Finance*, 3:3 (2000), 549-552 [pdf file](#)
  27. Entry and exit strategies under uncertainty: the case of non-gaussian distributions (with S.I. Boyarchenko), In M.J. Brennan and L. Trigeorgis (eds.), *Project Flexibility, Agency and Competition*. Oxford. New York: Oxford University Press (2000), 71-84. [pdf file](#)
  28. Search-Money-and-Barter Models of Financial Stabilization (with S.I. Boyarchenko), Working Paper Number 332, July 2000, *The William Davidson Institute Working Paper Series*, The William Davidson Institute at the University of Michigan Business School. [pdf file](#)
  29. Models of investment under uncertainty when shocks are non-Gaussian. The impact of the policy uncertainty on investment (with S.I. Boyarchenko), Working Paper Series of EERC (Economics Education and Research Consortium - Russia), 1998 [pdf file](#)
  30. A three-sector model of Russia's Virtual Economy (with S. Boyarchenko and S. Agapov), Working Paper Series of EERC, 02/06, 2002 [pdf file](#)

#### **RECENT RESULTS (MATHEMATICAL PHYSICS)**

1. Generalizations of the classical Weyl and Colin de Verdiere's formulas and the orbit method (with Mitya Boyarchenko), *Proc. Nat. Acad. of Sci USA* 102 (2005) , 5663-5668 [pdf file](#)
2. Beyond the classical Weyl and Colin de Verdiere's formulas for Schrödinger operators with polynomial magnetic and electric fields (with Mitya Boyarchenko), *Annales de l'Institut Fourier*, vol. 56, no. 6 (2006), pp. 1827--1901. <http://www.eco.utexas.edu/~leven/beyond6.pdf>
3. On the structure of spectra of periodic elliptic operators (with P.Kuchment), *Trans. AMS*, 354 (2002), 537-569 [pdf file](#)
4. Asymptotic formulae with remainder estimates for eigenvalue branches of the Schrödinger operator  $H-\lambda W$  in a gap of  $H$ . *Trans. Amer. Math. Soc.* 351 (1999), no. 3, 857--899. [pdf file](#)

#### **MAIN RESULTS (QUANTUM GROUPS)**

1. Last step in classification of irreducible representations of compact quantum groups
2. Proof of the multiplicative formula for the universal R-matrix for quantized universal enveloping algebras of simple Lie groups (with Yan Soibelman)
3. Proof of the Poincare-Birkhoff-Witt theorem for Yangians
4. Construction of Affine Yangians
5. A short proof of the commutation relation for quantized enveloping algebras.

#### **MAIN RESULTS (PDE and PDO)**

1. General calculus of PDO with symbols strongly degenerating on the boundary of a domain
2. Hierarchy of symbols and study of normal solvability and a priori estimates for wide classes of degenerate elliptic differential and hypoelliptic pseudo-differential operators
3. Boutet-de-Monvel calculus of boundary problem for PDO degenerating at the boundary
4. General form of the approximate spectral projection method and calculation of spectral asymptotics with a remainder estimate for various classes of boundary problems for PDE and PDO

#### **RECENT PREPRINTS AND WORKING PAPERS**

1. Valuation of Continuously Monitored Double Barrier Options and Related Securities (with Mitya Boyarchenko) August 14, 2008. Available at SSRN: <http://ssrn.com/abstract=1227065>
2. Prices and Sensitivities of Barrier and First-Touch Digital Options in Levy-Driven Models (with Mitya Boyarchenko) July 3, 2008. Available at SSRN: <http://ssrn.com/abstract=1155149>
3. Refined and Enhanced Fast Fourier Transform Techniques, with an Application to the Pricing of Barrier Options (with Mitya Boyarchenko) May 10, 2008, <http://ssrn.com/abstract=1142833>
4. Pricing American Options in Regime-Switching Models: FFT Realization, submitted to *SIAM J Control and Optimization* (with Svetlana Boyarchenko), April, 2008, <http://ssrn.com/abstract=1127562>
5. Estimating equations for a class of time-irreversible multi-factor models (with Nina Boyarchenko), February, 2008, <http://ssrn.com/abstract=1088922>
6. Fast and accurate pricing of barrier options under Lévy processes (with Oleg Kudrayvtsev), Dec 2007 <http://ssrn.com/abstract=1040061>
7. American options in the Heston model with stochastic interest rates (with Svetlana Boyarchenko), November 2007, <http://ssrn.com/abstract=1031282>
8. American options in Lévy models with stochastic volatility (with Svetlana Boyarchenko), November 2007, <http://ssrn.com/abstract=1031280>
9. American options in Lévy models with stochastic interest rates of CIR type (with Svetlana Boyarchenko), November 2007, <http://ssrn.com/abstract=1032716>
10. American Options in Lévy Models With Stochastic Interest Rates (with Svetlana Boyarchenko) (September 17, 2007). Available at SSRN: <http://ssrn.com/abstract=1015409>
11. American Options in Regime-Switching Lévy Models With Non-Semibounded Stochastic Interest Rates (with Svetlana Boyarchenko) (September 17, 2007). Available at SSRN: <http://ssrn.com/abstract=1015410>
12. American and European Options in Multi-Factor Jump-Diffusion Models, Near Expiry (February 24, 2007), <http://ssrn.com/abstract=965192>
13. Perpetual American Options in Regime-Switching Models (with Svetlana Boyarchenko) (September 5, 2006) <http://ssrn.com/abstract=928474>
14. American Options in Regime-Switching Models (with Svetlana Boyarchenko) (September 6, 2006) <http://ssrn.com/abstract=929215>
15. Asymptotic Pricing in Term Structure Models Driven by Jump-Diffusions of Ornstein-Uhlenbeck Type (with Nina Boyarchenko) (March 14, 2006) <http://ssrn.com/abstract=890725>
16. Discount factors ex post and ex ante, and discounted utility anomalies (with Svetlana Boyarchenko)(10/25/05). <http://ssrn.com/abstract=836064>
17. Perpetual American Options and Real Options under Mean-Reverting Processes (2005) <http://ssrn.com/abstract=714321>
18. A Theory of Endogenous Time Preference, and Discounted Utility Anomalies (with Svetlana Boyarchenko) (February 18, 2005). <http://ssrn.com/abstract=669062>
19. American and European Options Near Expiry, Under Markov Processes with Jumps . <http://ssrn.com/abstract=610544>
20. The American Put and European Options Near Expiry, Under Lévy Processes (February 26, 2004). <http://ssrn.com/abstract=520062>
21. Optimal Stopping Made Easy (with Svetlana Boyarchenko) (October 26, 2004). <http://ssrn.com/abstract=610621>
22. Eigenfunction Expansion Method in Multi-factor Models (with Nina Boyarchenko) (November 30, 2004). <http://ssrn.com/abstract=627642>
23. Practical Guide to Real Options in Discrete Time (with Svetlana Boyarchenko) (February 24, 2004). <http://ssrn.com/abstract=510324>
24. Practical Guide to Real Options in Discrete Time II (with Svetlana Boyarchenko). <http://ssrn.com/abstract=642262>
25. Fast option pricing under regular Lévy processes of exponential type (with V.M. Zherder) (2002)
26. Search-Money-and-Barter Models of Financial Stabilization, Working Paper Number 332, July 2000, *The William Davidson Institute Working Paper Series*, The William Davidson Institute at the University of Michigan Business School.

## RECENT PRESENTATIONS

1. Refined and enhanced FFT techniques, with applications to pricing barrier options and their sensitivities (with Mitya Boyarchenko), SIAM Conference on Financial Mathematics and Engineering, New Brunswick, NJ November 21-22
2. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Colloquim talk, Rutgers University, 20 November, 2008
3. Refined and enhanced FFT techniques, with applications to pricing barrier options and their sensitivities (with Mitya Boyarchenko), Talks in Financial and Insurance Mathematics, ETH Zurich, 13 November 2008
4. Carr's Randomization and New FFT Techniques for the Fast and Accurate Pricing of Barrier Options (with Mitya Boyarchenko (presenter) and Svetlana Boyarchenko), Bloomberg 12 November 2008
5. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Stochastic analysis seminar, Oxford-Man Institute, 20 October 2008
6. American options in the Heston model with stochastic interest rate and its generalizations (with Svetlana Boyarchenko) 35TH EFA Annual Meeting, 27-30 August 2008, Athens, Greece
7. Estimating Equations for a Class of Time-Irreversible Multifactor Models (with Nina Boyarchenko) EEA/ESEM joint meetings, Milan, August 27-31
8. American options in the Heston model with stochastic interest rate (with Svetlana Boyarchenko) 14th Annual Conference on Computing in Economics and Finance, Université de la Sorbonne, Paris, June 26-28, 2008.
9. American options in regime-switching Lévy models with stochastic volatility and stochastic interest rate (with Svetlana Boyarchenko), 2008 World Congress of Bachelier Finance Society, London, July 18, 2008
10. Fast and accurate pricing of barrier options under Lévy processes (with Oleg Kudrayvtsev), 2008 World Congress of Bachelier Finance Society, London, July 17, 2008
11. American options in regime-switching Lévy models with non-semibounded stochastic interest rates (with Svetlana Boyarchenko), The 2008 American Control Conference, Seattle, June 11, 2008
12. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Finance seminar, University of Geneva, Geneva, May 13, 2008
13. The Wiener-Hopf factorization as a general method for valuation of real and American options, Workshop at Math.Dept. Imperial College, London, May 14, 2008
14. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Seminar at Math.Dept. University of Leicester, Leicester, May 15, 2008
15. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Seminar at Math.Dept. University of South Wales, Swansea, May 16, 2008
16. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Seminar at Math.Dept. University of York, York, May 19, 2008
17. American options in Lévy models with stochastic volatility (with Svetlana Boyarchenko), 57th Annual Meeting Midwest Finance Association, San Antonio, Texas, February 27-March 1, 2008
18. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Seminar at Math.Dept. University of Michigan, Ann Arbor, January 25, 2008
19. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Research seminar, department of Risk Management and Insurance, J. Mack Robinson College of Business, Georgia State University, January 15, 2008
20. Estimating equations for a class of time-irreversible multi-factor models (with Nina Boyarchenko), Winter Meeting of the Econometric Society, New Orleans, January 5, 2008
21. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Research seminar, Finance department, the Belk College of Business, University of North Carolina at Charlotte, November 2, 2007
22. Estimating equations for a class of time-irreversible multi-factor models (with Nina Boyarchenko), Frequency Domain Conclave, University of Illinois at Urbana Champaign, October 26, 2007.
23. The Wiener-Hopf factorization as a general method for valuation of real and American options (with Svetlana Boyarchenko), Frequency Domain Conclave, University of Illinois at Urbana Champaign, October 26, 2007.
24. American options in regime-switching models with stochastic interest rates (with Svetlana Boyarchenko), Computational Methods in Finance Conference, July 26-27, 2007, University of Waterloo, Canada
25. Carr's randomization in regime switching models (with Svetlana Boyarchenko), 2007 CMMSE Conference, Illinois Institute of Technology, Chicago, June 23, 2007

26. Irreversible investment under regime switching uncertainty and policy interventions (with Svetlana Boyarchenko), Summer Meeting of the Econometric Society, Duke University, June 22, 2007
27. American Options in Regime-Switching models (with Svetlana Boyarchenko), 8<sup>th</sup> SAET Conference on Current Trends in Economics, Kos, Greece, June 21, 2007
28. A general method for pricing of Real Options and American Options in Regime-Switching models (with Svetlana Boyarchenko), 2007 Decision and Risk Analysis Conference, Dallas, May 21-22, 2007
29. Optimal stopping in regime-switching Lévy models, with applications to American options and real options (with Svetlana Boyarchenko), Joint Mathematics Meetings, New Orleans, January 5-8, 2007
30. General option exercise rules for regime-switching models (with Svetlana Boyarchenko), Quantitative Methods in Finance 2006, Sydney, 13-16 December 2006
31. General option exercise rules for regime-switching models (with Svetlana Boyarchenko), Center for Research in Financial Mathematics and Statistics Seminar, University of California, Santa Barbara, November 13, 2006
32. Generalization of the classical Weyl and Colin de Verdière's formulas and orbit method (with Mitya Boyarchenko), Colloquium of Mathematics Department, Kansas State University, Manhattan, October 24, 2006
33. Free boundary problems and optimal stopping in Lévy models (with Svetlana Boyarchenko), Analysis Seminar, Kansas State University, Manhattan, October 18, 2006
34. Entry and Exit problems in regime-switching models (with Svetlana Boyarchenko), Midwest Economic Theory Conference, Purdue University, West Lafayette, October 13-15, 2006
35. Option pricing in regime-switching models (with Svetlana Boyarchenko), Stochastic Control seminar, University of Kansas, September 27, 2006
36. General option exercise rules, with applications to embedded options and monopolistic expansion (with Svetlana Boyarchenko), Stochastic Control seminar, University of Kansas, September 20, 2006
37. Asymptotic pricing in term structure models driven by jump-diffusions of Ornstein-Uhlenbeck type, EEA-ESEM 2006 Meeting, Vienna, August 24-28.
38. Asymptotic Analysis in Term Structure Models, 2006 SIAM Conference on Financial Mathematics and Engineering, Boston, July 9-12, 2006
39. General option exercise rules, with applications to embedded options and monopolistic expansion (with Svetlana Boyarchenko), Society for Economic Dynamics, Annual Meeting, Vancouver, July 6-8, 2006
40. General option exercise rules, with applications to embedded options and monopolistic expansion (with Svetlana Boyarchenko), 2006 North American Summer Meeting of Econometric Society, University of Minnesota, Minneapolis, June 22 – 25, 2006
41. The Wiener-Hopf method with applications to Mathematical Finance, Seminar at l'ENPC (CERMICS) et l'Université de Marne la Vallée, Marne la Vallée, June 9, 2006
42. Discount factors ex post and ex ante, and discounted utility anomalies (with Svetlana Boyarchenko), Department of Economics seminar, Lawrence, Kansas, April 14, 2006
43. The Wiener-Hopf method in applications to optimal stopping problems in Finance and Economics (with Svetlana Boyarchenko), AMS Meeting, Notre Dame, April 8-9, 2006
44. Finite difference scheme for pricing American options under Lévy processes (with O. Kudryavtsev and V.Zherder), AMS Meeting, Florida International University, Miami, April 1-2, 2006
45. Finite difference scheme for pricing American options under Lévy processes (with O. Kudryavtsev and V.Zherder), AMS Meeting, Florida International University, Miami, April 1-2, 2006
46. Finite difference scheme for pricing American options under Lévy processes (with O. Kudryavtsev and V.Zherder), An Amamef Conference on Numerical Methods in Finance, Inria, February 1-3, 2006
47. Eigenfunction expansion method in multi-factor quadratic term structure models with jumps (with Nina Boyarchenko), An Amamef Conference on Numerical Methods in Finance, Inria, February 13, 2006
48. Mathematical Finance: an overview. Talk at the colloquium at Dept. of Mathematics, University of Georgia, Athens, November 10, 2005
49. Discount factors ex post and ex ante, and discounted utility anomalies (with Svetlana Boyarchenko). Midwest Economic Theory Conference, Lawrence, Kansas, October 14-15, 2005
50. A Theory of Endogenous Time Preference, and Discounted Utility Anomalies (with Svetlana Boyarchenko) 7<sup>th</sup> SAET Conference on Current Trends in Economics, Vigo, Spain, June 27-July 3, 2005
51. Two fast numerical methods for pricing of American options, Mathematical Finance Seminar, University of Southern California, April 2005
52. The EPV pricing model for American options (with Svetlana Boyarchenko), Sectional Meeting of AMS, Albuquerque, October 15-17, 2004

53. Beyond Weyl and Colin de Verdière's formulas for Schrödinger operators with polynomial electric and magnetic fields (with Mitya Boyarchenko), Sectional Meeting of AMS, Albuquerque, October 15-17, 2004
54. Beyond Weyl and Colin de Verdière's formulas for Schrödinger operators with polynomial electric and magnetic fields, Mathematical Physics Seminar, University of Texas at Austin, September 2004.
55. Practical guide to real options in discrete time: lattice models (with Svetlana Boyarchenko), 29th European meeting of the Econometric Society, Madrid, August 2004.
56. The European options and American put near expiry, under Lévy processes. The Third World Congress of the Bachelier Finance Society, Chicago, July 21-25, 2004.
57. Practical guide to real options in discrete time (random walks on  $\mathbb{R}$ ) (with Svetlana Boyarchenko), 10th International Conference on Computing in Economics and Finance, Amsterdam, July 2004
58. Asymptotic analysis and pseudo-differential operators in applications to Finance, a short lecture course presented at the Spring School at the University of Wales at Swansea (April 2004)
59. The EPV pricing model for American options, University of Texas at Austin, May 2004.
60. The European options and American put near expiry, under Levy processes. Mathematical Finance Seminar, University of Texas at Austin, February 2004.
61. Consistency Conditions for Affine Term Structure Models, Winter Meeting of Econometric Society, San-Diego, January 2004.
62. Absolute continuity of spectra of periodic elliptic operators, Mathematical Physics Seminar, University of Texas at Austin, November 2003.
63. Pseudo-diffusions and Quadratic Term Structure Models, Summer Meeting of Econometric Society, Evanston, June 2003
64. Optimal Stopping in Non-Gaussian Models, with Applications to Pricing of American Options and Real Options. Mathematical Finance Seminar, Courant Institute, New York University, May 2003
65. Consistency conditions for affine term structure models. Mathematical Finance Seminar, University of Texas at Austin, May 2003.
66. Optimal Stopping in Non-Gaussian Models, with Applications to Pricing of American Options and Real Options. Applied Probability Seminar, Stanford University, October 2002

### **SCIENTIFIC VISITS ONE MONTH AND MORE**

MaPhySto, Aarhus, Denmark, August-October 2000  
 Department of Economics, University of Pennsylvania, USA, September 1998-May 1999  
 Department of Mathematics, Wichita State University, USA, April-May 1998  
 Department of Mathematics, Ruhr Technical University, Germany, May-June 1997  
 Department of Mathematics, Braunschweig University, Germany, June 1996  
 Department of Mathematics, University of Sussex, UK, October-November 1994  
 Department of Mathematics, University of Augsburg, Germany, March-April 1994  
 Department of Mathematics, Kings College, London, May 1993  
 Department of Mathematics, University of York, UK, December 1992-November 1993