Curriculum vitæ

Jean-Pierre FOUQUE

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Born: July 3, 1954, Aubagne, France
US citizen

Education:
Graduate Studies at the University Pierre et Marie Curie (Paris 6, Jussieu).

- Ph.D. in Mathematics (Doctorat de troisième cycle), Paris 6, 1979.
  Advisor: Professor Nicole El Karoui
  Title: **Régularité des trajectoires des amarts et hyperamarts réels**.
- Doctorat ès-Sciences Mathématiques, Paris 6, 1986.
  Chairman of the examining board: Professor Jacques Neveu
  Title: **Sur trois aspects de la théorie des processus stochastiques**.

Positions:

- 2006 - : Professor, Statistics & Applied Probability, Director of the Center for Research in Financial Mathematics and Statistics (CRFMS), University of California Santa Barbara.
- 2003 (Spring) and 2004-2005 : Interim Head, Department of Mathematics, NCSU.
- 2002-2005 : Director, Financial Mathematics Program, NCSU.
- 2001-2005 : Professor of Mathematics, NCSU.

- 1998-2001 : Associate Professor of Mathematics, NCSU.
- 1989-98 : Chargé de Recherche C.N.R.S. and Maître de Conférences at the Ecole Polytechnique, France.
- 1982-89 : Chargé de Recherche C.N.R.S., Laboratoire de Probabilités, Université de Paris 6, France.
- 1980-82 : Visiting Assistant Professor at the Ohio State University.

1996-97 : Sabbatical year: Stanford University (NATO grant).

Visiting positions at the University of California Irvine:

- Spring 85 and 89 : Assistant Professor
- Fall 90 and 91 : Associate Professor
- Fall 92 : Professor

Professional Affiliations:

- American Mathematical Society (AMS)
- Society for Industrial and Applied Mathematics (SIAM). Chair of the *SIAG Financial Mathematics and Engineering* (1/1/2009 - 12/31/2010).
- Bachelier Finance Society (BFS)
- Institute of Mathematical Statistics (IMS). *Fellow since 2009.*

Editorial Activities:

- Co-Editor of the Israel Mathematical Conference Proceedings (Vol. **10**) on *Stochastic Analysis: Random Fields and Measure-Valued Processes*, 1996, Bar-Ilan University.
- Editor of the NATO Science Series C, Vol. **531**, *Diffusive Waves in Complex Media*, 1999, Kluwer.
- Associate Editor of the *Annals of Applied Probabilities*, 2006-
- Co-Editor of the Volume XXX of *ESAIM Probability & Statistics*, Stochastic analysis and mathematical finance, 2007.

- Co-Editor of the Volume **22** of Advances in Econometrics, 2008.
- Associate Editor of the *SIAM Journal on Financial Mathematics*, 2008-
- Member of the *SIAM Book Editorial Board*, 2009-2012.

Grants:

- NSF-CNRS grant with Professor René Carmona from UCI on: **Stochastic Partial Differential Equations. Approximations and Properties**. 1992-95.
- Arc-en-Ciel grant with Professor Ely Merzbach from Bar-Ilan University, Israel. 1994-95.
- NATO grant for the sabbatical year 1996-97.
- NCSU, Faculty Research and professional Development (FR&PD). Financial Mathematics, 1999.
- NSF/DMS 0071744: **Asymptotic Methods in Financial Mathematics**, 2000-2003.
- ONR (N00014-02-1-0089): **Time-Reversal for Waves in Radom Media**, 2001-2005.
- DARPA/ONR (N00014-02-1-0739): **Time-Reversal for Electromagnetic Waves in Complex Media**, 2002-2003.
- Sloan grant for developing a new **Professional Scientific Masters in Financial Mathematics**, 2002-2005.
- NSF/DMS 0455982-**FRG: Collaborative Research on Mathematical Methods for Defaultable Instruments**, 2005-2008.
- ONR (N00014-05-1-0442): **Time-Reversal for Waves in Radom Media**, 2005-2009.
- NSF/DMS 0806461: **Collaborative Research: Small time behavior of multiscale diffusions motivated by stochastic volatility models**, 2008-2011.

Organization of Conferences:

- International Conference **"Brownian sheet: New results and developments"**, Israel, september 1993, co-editor of the proceeding (Israel Mathematical Conference Proceedings, Volume 10, 1996).
- Math-Physics Workshops on **Wave propagation in random media**, Ecole Polytechnique, June 1994 and November 1995.
- Director of the NATO Advanced Study Institute on **Diffusive Waves in Complex Media**, Les Houches, France (March 1998).
  Editor of the NATO Science Series C, Vol. 531 (1999), Kluwer.
- Workshop on **Research in Financial Mathematics and Engineering**, NCSU, May 24, 2001.
- Conference on **Random Phenomena in Applied Mathematics** in honor of George Papanicolaou, Stanford, January 24-26, 2003.
- Conference on **Stochastic Analysis and Mathematical Finance** in honor of Nicole Elkaroui, Paris, June 2-4, 2004.
- Workshop on **Mathematical Finance**. CRM Montreal, June 1-5, 2005 (http://www.crm.umontreal.ca/act/theme/theme_2004-2005_fr/index.html).
- SAMSI Program in **Financial Mathematics, Statistics and Econometrics**, Fall semester 2005 (http://www.samsi.info/200506/fmse/fmse-home.html).
- Co-organizer of the special session on **Financial Mathematics** at the *AMS annual meeting* in New Orleans, January 5-6, 2007.
- Co-organizer of the special session on **Financial Mathematics** at the *AMS annual meeting* in San Diego, January 8-9, 2008.
- Co-organizer of the 2nd **Princeton Credit Risk Conference** May 23-24, 2008 (NSF-FRG: *The Mathematics of Defaultable Securities*).
- Co-organizer of the Conference on **Stochastic Analysis and Applications: from Mathematical Physics to Mathematical Finance** in honor of René Carmona. Princeton, 13-15 June 2008.

- Co-organizer of the **NSF/CBMS Regional Conference in the Mathematical Sciences on Convex Duality Methods in Mathematical Finance**. June 22-27, 2008 at UCSB.
- Member of the Scientific Committee of the 2nd **SIAM Conference in Financial Mathematics**, Rutgers University, November 21-22, 2008.
- Chair of the organizing committee of the 3nd **Western Conference on Mathematical Finance**, Santa Barbara, CA, November 13-14, 2009.
- Co-Chair of the Scientific Committee of the 3nd **SIAM Conference in Financial Mathematics**, California, November 12-13, 2010.

Masters students:

- B. Weir, NCSU, Math., April 2000.
- J. Dai, NCSU, Math., June 2002.
- K. Mehta, NCSU, EE, May 2003.
- A. Mathur, NCSU, OR/Math, Dec. 2005.
- Financial Mathematics Masters students at NCSU: four graduated in 2004, seven graduated in 2005.

Ph.D. students:

- Jean-François Clouet, Ph.D. Ecole Polytechnique, December 1994.
- José Chillan, Ph.D. Ecole Polytechnique, June 1996.
- Florence Bailly, Ph.D. Orsay University, Paris XI, December 1996.
- Josselin Garnier, Ph.D. Ecole Polytechnique, December 1996.
- Jean Ndzie, Ph.D. Paris VI University, January 1999.
- Tracy Tullie, Ph.D. NCSU, June 2002.
- Chuan-Hsiang (Sean) Han, Ph.D. NCSU, June 2003.
- Xianwen (Stephen) Zhou, Ph.D. NCSU, February 2006.

- Petr Glotov, Ph.D. NCSU, February 2006.
- Doug Vestal, Ph.D. UCSB, June 2008.
- Brian Wignall, Ph.D. UCSB, June 2009.
- Eli Kollman, Ph.D. UCSB, June 2009.
- In progress at UCSB:
  - Matt Lorig,
  - Winslow Strong,
  - Raj Sau,
  - Bin Ren,
  - Chunkai Gao.

Invited Lectures and Seminars (since September 1998):

- NCSU Probability Seminars, October 5 and 12, 1998.
- Invited lecture in the Fourth Annual International Press Lecture Series: stochastic differential equations and their use in financial mathematics. Irvine, CA. November 5-7, 1998.
- NCSU Operation Research Seminar, February 8, 1999.
- Invited lecture in the French-Israeli Conference on SPACE: Frontiers of Interdisciplinary Research and Applications. Session on Stochastic processes in honour of Professor Alain Bensoussan.
  Bar Ilan University, Israel. March 21-22, 1999.
- Invited lecture in the SIAM Conference on Mathematical and Computational Issues in the Geosciences. Minisymposium on Waves in Multiscale Media. San Antonio, Texas. March 24-27, 1999.
- UNC Chapel Hill, Center for Stochastic Processes Seminar, April 14, 1999.
- Invited lecture in the International Conference on Mathematical Finance, Hammamet, Tunisia. June 14-18, 1999.
- Ecole Polytechnique, France, Probability Seminar. June 21, 1999.
- Invited lecture in the Third Seminar on Stochastic Analysis, Ascona, Switzerland. September 20-24, 1999.
- Invited lecture in the Minisymposia on Mathematics and Finance, SIAM Southeast Regional Mathematics in industry Workshop, NCSU Raleigh, October 10-12, 1999.
- Brown University Applied Mathematics Seminar, November 9, 1999.
- Invited lecture in the Hotelling Triangle Econometrics Conference, Raleigh-Durham, December 10, 1999
- NCSU Probability Seminar and Seminar Series in Financial Mathematics and Engineering, January 24, 2000.
- Ecole Polytechnique, France, Seminar on Stochastic Models in Finance. March 13, 2000.

- Workshop “Frontières en Finance”, Paris (March 17, 2000) and London (June 9, 2000).

- Workshop on Financial Mathematics, Stanford University, April 29-30, 2000.

- Mathematics Colloquium, Bar Ilan University, Israel, May 2000.

- Mathematical Geophysics Summer School at Stanford: *Time-reversal in randomly layered media*. August 2000.

- Workshop on Mathematical Finance, Universität Konstanz, Germany. October 5-7, 2000.

- Purdue University Mathematics Seminar, October 16, 2000.

- MathWeek 2000, RISK’s 2nd Annual Conference on Innovative Research in Derivatives Modelling and Analysis. Master Class, New York November 13, 2000 and London November 27, 2000.

- Ecole Thématique CNRS-GDR-FIQUAM. L’interface entre données et modèles en finance: Calibration, corrélation et mesures des risques. Aussois, France, 10-15 Décembre 2000.

- Columbia University Probability Seminar, April 6, 2001.

- Workshop on *Imaging in noisy environments*, Crete, June 19-21, 2001.

- Conference on Stochastic Processes and their Applications, Cambridge University, UK, July 9-13, 2001.

- AMS/SMF joint congress, special session on *Mathematical Methods in Financial Modeling*. Lyon, France, July 17-20, 2001.

- IMPA, Rio de Janeiro, Brazil: Colloquium on Financial Mathematics and Seminar on Computational Mathematics, Nov. 16 and 17, 2001.

- MathWeek 2001, RISK’s 3rd Annual Conference on Innovative Research in Derivatives Modelling and Analysis. New York November 7, 2001 and London November 28, 2001.

- Workshop at MSRI: *Inverse Problems and Applications*, November 16, 2001.

- Invited lecture in the Triangle Econometrics Conference, Raleigh-Durham, December 7, 2001.
- Integrable Systems Seminar, Duke University, January 17, 2002.
- UC Santa Barbara, joint Colloquium Mathematics, Statistics and Applied Probability. February 13, 2002.
- UC Irvine, Mathematics Colloquium. February 14, 2002.
- AMS Meeting, Ann Arbor MI, Session on Financial Mathematics, March 2, 2002.
- Princeton University, Applied and Computational Mathematics, Time Frequency Seminar, March 12, 2002.
- International Conference on Differential Equations and Mathematical Physics, University of Alabama, Birmingham. Session on Invrese Problems, March 26, 2002.
- Fourth Seminar on Stochastic Analysis, Random Fields and Applications. May 19-24, 2002, Ascona, Switzerland. Invited speaker for the "public lecture" on financial mathematics (Centro Studi Bancari Lugano, May 24, 2002).
- Annual SIAM Meeting, talks on financial mathematics and time reversal for waves in random media. Philadelphia, PA, July 2002.
- Mathematical Geophysics Summer School at Stanford: *Time-reversal super-resolution in randomly layered media*. August 2002.
- Joint Numerical Analysis/Probability Seminar, NCSU, two talks on *Time-Reversal*, September 10 and 17, 2002.
- Applied Mathematics Seminar, UNC Chapel Hill, October 25, 2002.
- Invited lecture in the Triangle Econometrics Conference, Raleigh-Durham, December 6, 2002.
- Invited lecture in the Conference on SPDE's, Institute for Advanced Studies, Princeton, March 3-6, 2003.
- Invited lecture in the ICMS Conference on SDEs and SPDEs: Numerical Methods and Applications. March 1-April 4, 2003, Edinburgh, UK.

- Invited lecture in the AMS-IMA-SIAM Summer Research Conference on Mathematics of Finance, June 22-26, 2003. Snowbird, Utah.
- SAMSI Workshop on Stochastic Computation, Financial Models. June 28, 2003.
- Invited lecture in the Workshop on Time Reversal, UC Irvine, August 8-11, 2003.
- Contributed lecture in the Workshop on Computational Finance, Zürich, September 11-13 , 2003.
- NCSU Operation Research/Financial Mathematics Seminar, October 14, 2003.
- Invited lecture in the Tenth Annual CAP Workshop on Derivative Securities and Risk Management, Center for Applied Probability at Columbia University, November 7, 2003.
- Invited speaker in the seminar of the Center for Computational Finance, Carnegie Mellon University, February 23, 2004.
- Workshop "Finance Concepts", Paris, March 9, 2004.
- Invited lecture in the session on Financial Mathematics, AMS Meeting, Talahasee, FL, March 13, 2004.
- Invited speaker in the *Quantitative Finance Day* at Georgia Institute of Technology, Atlanta, March 26, 2004.
- Invited speaker at the *Cornell Finance Meeting*, Ithaca, NY, March 27, 2004.
- Invited speaker in the minisymposium on *time reversal* at the opening conference of the *Inverse Problems Center* at RPI, NY, April 5, 2004.
- NCSU Probability/Financial Mathematics Seminar, April 23, 2004.
- Invited speaker at the IMA workshop *Risk Management and Model Specifications Issues in Finance.* Minneapolis, April 12-16, 2004
- Invited speaker at the IMA workshop *Model, Implementation, Algorithms and Software Issues.* Minneapolis, May 3-7, 2004

- Invited speaker at the *Conference on Stochastic Analysis and Mathematical Finance in honor of Nicole Elkaroui's 60th birthday*, Institut Henri Poincaré, Paris, June 2-4, 2004.

- *Conference on Monte Carlo and Probabilistic Methods for PDE's*, two contributed talks to Minisymposia on *Financial Mathematics*, and *Waves in Random Media*, Juan-les-Pins, France, June 7-10, 2004.

- *Third World Congress of the Bachelier Finance Society*, contributed talk on *Volatility and Default*, Chicago, July 21-24, 2004.

- Invited speaker at the *Workshop on time-reversal communications in richly scattering environments*, American Institute of Mathematics, Palo Alto CA, October 18-22, 2004.

- UNC-Charlotte Seminar on Mathematical Finance, November 12, 2004.

- UC Santa Barbara Seminar Statistics & Applied Probability, December 6, 2004.

- Columbia University Probability Seminar, December 17, 2004.

- University of Texas Austin, Computational Finance Seminar, January 28, 2005.

- Quantitative Finance at the Newton Institute, Cambridge University. Workshop on Credit Risk, February 21-26, 2005.

- Invited three hour mini-course on *Introduction to Financial Mathematics and Volatility Modeling* at the SIAM-SEAS meeting in Charleston SC, March 25-26, 2005.

- Invited talk in the Workshop on *Mathematical Finance*. CRM Montreal, June 1-5, 2005.

- Plenary speaker at the *IX Workshop on Partial Differential Equations, Theory, Computation and Applications*. IMPA, July 18-22, Rio de Janeiro, Brazil.

- Invited speaker at the meeting on *PDE & Finance*, Mittag-Leffler Institute, Stockholm, Sweden. August 15-19, 2005.

- Invited speaker at the Workshop on *Radiative transport and diffusion-approximation: From theory to applications*, CIRM, Marseille, France. September 5-9, 2005.

- SAMSI Workshop on Credit Risk, November 1, 2005.

- Invited talk in the Special Session SIAM-AMS on Time Reversal Methods: Analysis and Applications. AMS Meeting, San Antonio, Texas. January 12-15, 2006.

- Invited speaker in the Seminar Series on Quantitative Finance, The Fields Institute, Toronto, Canada. April 26, 2006.

- Invited plenary talk in the SIAM Conference on Financial Mathematics and Engineering, Boston, July 9-12, 2006.

- Invited Lecturer at the Summer School in *Stochastic Finance*, Island of Chios, Greece, July 17-22, 2006.

- Mathematics Colloquium, USC, September 13, 2006.

- Financial Mathematics Seminar, NC State University, September 22, 2006.

- Mathematical Finance Seminar, University of British Columbia, September 28, 2006.

- Invited talk at the Conference *Numerical and Stochastic Models*, Paris, October 23-25, 2006.

- Economics seminar, Louisiana State University, November 3, 2006.

- Invited talk at the 5th Annual Advances in Econometrics Conference at Louisiana State University, November 4-5, 2006.

- Invited talk at the *Stanford-Tsukuba-WCQF joint workshop.* Stanford University, March 8-10, 2007.

- Invited talk in the special session on *Inverse Problems for Wave Propagation* at the AMS sectional meeting in Tucson, AZ. April 21-22, 2007.

- Invited talk at the *International Workshop on Rare Event Simulation.* University of Nice, France. April 30 – May 4, 2007.

- Invited talk at the workshop *Inverse Problems in Stochastic Differential Equations*, May 22-26, 2007. University of Southern California, Los Angeles.
- Probability seminar, UC Irvine, May 29, 2007.
- Mathematical Finance seminar, University of Texas Austin, August 31, 2007.
- Mathematics Colloquium, Kansas University, September 13, 2007.
- Invited speaker at the Opening Workshop on *Random Media* at SAMSI, NC, September 23-26, 2007.
- Invited speaker at the Conference *Mathematics and Finance: Research in Options*, IMPA, Rio de Janero, Brazil, October 21-26, 2007.
- Invited speaker at the *Southern California Probability Symposium*, Irvine, CA, December 1, 2007.
- Invited speaker at the special session in Financial Mathematics, *AMS annual meeting*, San Diego, January 8-9, 2008.
- Financial Mathematics Seminar, Stanford University, April 25, 2008.
- Invited speaker at the Conference on *Stochastic Analysis and Applications: from Mathematical Physics to Mathematical Finance* in honor of René Carmona. Princeton, 13-15 June 2008.
- Invited speaker at the *2008 Daiwa Lecture Series* (Kyoto, 7/29 – 8/1), and *International Workshop on Financial Engineering* (Tokyo, 8/4-5).
- Invited speaker in the *Special Semester on Stochastic with Emphasis on Finance*, RICAM, Linz, Austria, September-December 2008:
  - Tutorial, September 3-6.
  - Kick-off-Workshop, September 8-12.
- Invited speaker at the *Implied Volatility Models Conference* organized by the Bendheim Center for Finance (Princeton University). Huntington Beach, CA, October 10-11, 2008.
- Invited speaker at the *2nd Western Conference in Mathematical Finance*, Austin, TX. October 31 - November 2, 2008.

- Invited speaker at the *SIAM Conference on Financial Mathematics and Engineering*, New Brunswick, NJ, November 21-22, 2008.
- Invited speaker at the Conference *Mathematics and Finance: Research in Options*, Angra dos Reis, Rio de Janero, Brazil, November 23-27, 2008.
- Plenary speaker at *QMF (Quantitative Methods in Finance) 2008*, Sydney, Australia, December 17-20, 2008.
- Mathematics Colloquium, University of Tennessee, Knoxville. January 30, 2009.
- Plenary speaker at the *Conference on small time asymptotics, perturbation theory and heat kernel methods in mathematical finance*, Wolfgang Pauli Institute (WPI) Vienna, Austria, February 10-12, 2009.
- Seminar of the Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong, March 19, 2009.
- Invited talk at the National Center for Theoretical Sciences, Taiwan, March 23, 2009.
- Applied Mathematics Colloquium at the National Chia-Tung University, Taiwan, March 24, 2009.
- Invited talk at the Academia Sinica, Taipei, Taiwan, March 25, 2009.
- Statistics/Operations Research/Math Finance Seminar, Claremont Graduate University, CA. April 9, 2009.
- Mathematical Finance Colloquium, University of Southern California, April 10, 2009.
- Seminar of the IEOR Department at the University of California Berkeley, May 1st, 2009.
- Applied Mathematics Seminar at Stanford University, May 15, 2009.
- Guest lecturer at Bar Ilan University, Israel, July 17–August 10, 2009.
- Invited speaker at the Conference *Mathematics and Finance: Research in Options*, Buzios, Brazil, November 23-25, 2009.

Jean-Pierre FOUQUE

PUBLICATIONS

1. **Régularité des trajectoires des Amarts et Hyperamarts réels**. C.R. Acad. Sc. Paris **A 290**, 107-110 (1980).

2. **Enveloppe de Snell et théorie générale des processus**. C.R. Acad. Sc. Paris **A 290**, 285-288 (1980).

3. **Régularité à gauche des martingales fortes à plusieurs indices** (with A. Millet). C.R. Acad. Sc. Paris **A 290**, 773-776 (1980).

4. **Passé d'un point d'arrêt et arrêt des processus à deux indices**. C.R. Acad. Sc. Paris **I 293**, 83-85 (1981).

5. **The past of a stopping point and stopping for two-parameter processes**. J. of Multivariate Analysis **13**, 561-577 (1983).

6. **La convergence en loi pour les processus à valeurs dans un espace nucléaire**. Annales de l'I.H.P. **20**, 225-245 (1984).

7. **Hydrodynamical limit for the asymmetric simple exclusion process** (with A. Benassi). Annals of Prob. **15**, 546-560 (1987).

8. **Hydrodynamical limit for the asymmetric zero-range process** (with A. Benassi). Annales de l'I.H.P. **24**, 189-200 (1988).

9. **Hydrodynamical behavior of asymmetric attractive particle systems**. Proceedings of the Summer Seminar on Mathematics of Random Media. AMS Lectures in Applied Mathematics **27** (1989).

10. **Asymmetric attractive particle systems on Z: hydrodynamical limit for monotone initial profiles** (with A. Benassi, E. Saada and M.E. Vares). J. Stat. Phys. **63**, 719-735 (1991).

11. **Fluctuation field for the asymmetric simple exclusion process**. Oberwolfach Conference on Random Partial Differential Equations. Intert. Series of Numer. Math. Birkhäuser, Ed. by Hornung, Kotelenez and Papanicolaou (1991).

12. **A diffusion-approximation result for two-parameter processes** (with R. Carmona). Prob. Th. and Rel. Fields **98**, 277-298 (1994).

13. **A limit theorem for linear boundary value problems in random media** (with E. Merzbach). Annals of App. Prob. **4**, 549-569 (1994).

14. **Totally asymmetric attractive particle systems on Z: hydrodynamical limit for general initial profiles** (with E. Saada). Stoch. Proc. and Th. Appl. **51**, 9-23 (1994).

15. **Diffusion-approximation for the advection-diffusion of a passive scalar by a space-time gaussian velocity field** (with R. Carmona) . Seminar on Stochastic Analysis, Random Fields and Applications (Ed. by E. Bolthausen, M. Dozzi and F. Russo), 37-50. Birkhäuser, Basel (1994).

16. **Waves in random media and two-parameter diffusions**. Israel Mathematical Conference Proceedings, Volume **10** (1996).

17. **Spreading of a pulse travelling in random media** (with J.F. Clouet). Annals of Appl. Prob. **4**, 1083-1097 (1994).

18. **Spectral analysis of randomly scattered signals using the wavelet transform** (with J.F. Clouet and M. Postel). Wave Motion **22**, 145-170 (1995).

19. **Estimation of local power spectral densities for non-stationary signals using wavelet transform** (with J.F. Clouet and M. Postel). Mathematics and Computers in Simulation, **38**, 183-188 (1995).

20. **Amplification of incoherent light with wide spectrum** (with J. Garnier). Proceedings of the Third International Congress on Wave Propagation, INRIA, Mandelieu, France 1995.

21. **Parabolic and white noise approximation for waves in random media** (with F. Bailly and J.F. Clouet). SIAM Journal on Applied Mathematics, Vol. **56**, No 5 (1996).

22. **On waves in random media in the diffusion approximation regime** (with J. Garnier). Conference on waves in random media. IMA Minnesota, November 1994. IMA Volumes in Mathematics and its Applications, Vol. **96**, Ed. G. Papanicolaou, 31-48 (1997).

23. **Amplification of broadband incoherent light in homogeneously broadened media in presence of Kerr nonlinearity** (with J. Garnier, L. Videau, C. Gouedard and A. Migus) . J. Opt. Soc. Am. B, Vol. **14**, No 10, 2563-2569 (1997).

24. **A time reversal method for acoustical pulses propagating in randomly layered media** (with J.F. Clouet). Wave Motion **25**, 361-368 (1997).

25. **Pressure fields generated by acoustical pulses propagating in randomly layered media** (with J. Chillan). SIAM Journal on Applied Mathematics, **58** , 1532-1546 (1998).

26. **Forward and Markov approximation: the strong intensity fluctuations regime revisited** (with G. Papanicolaou and Y. Samuelides). Waves in Random Media, **8**, 303-314 (1998).

27. **Asymptotics of a Two-Scaled Stochastic Volatility Model** (with G. Papanicolaou and R. Sircar). Volume dedicated to J.L. Lions. Gauthiers-Villars, 517-526 (May 1998).

28. **Acoustic pulses propagating in randomly layered media**. NATO Science Series C, Vol.**531**: Diffuse Waves in Complex Media, Kluwer, J.P. Fouque (Ed.), 319-346 (1999).

29. **Mean-Reverting Stochastic Volatility** (with G. Papanicolaou and R. Sircar). International Journal of Theoretical and Applied Finance, **3**(1), 101-142 (2000).

30. **Financial Modeling in a Fast Mean-Reverting Stochastic Volatility Environment** (with G. Papanicolaou and R. Sircar). Asia-Pacific Financial Markets, **6**(1), 37-49 (1999).

31. **Random Volatility** (with G. Papanicolaou and R. Sircar). RISK Magazine, February 2000.

32. **Derivatives in Financial Markets with Stochastic Volatility** (Book with G. Papanicolaou and R. Sircar). Cambridge University Press, 2000.

33. **From the Implied Volatility Skew to a Robust Correction to Black-Scholes American Option Prices** (with G. Papanicolaou

and R. Sircar) . International Journal of Theoretical and Applied Finance, **4**(4), 651-675 (2001).

34. **Stochastic Volatility Modeling for Derivative Pricing and Risk Management** (with G. Papanicolaou and R. Sircar) . SIAM Activity Group on Control and Systems Theory Newsletter, **7**(1), 1-7 (July 2000).

35. **Stochastic Volatility and Epsilon-Martingale Decomposition** (with G. Papanicolaou and R. Sircar). Trends in Mathematics, Birkhauser Proceedings of the Workshop on Mathematical Finance. M. Kohlmann and S. Tang Eds, Konstanz, Germany, 152-162 (2000).

36. **Variance Reduction for Monte Carlo Simulation in a Stochastic Volatility Environment** (with T. Tullie). Quantitative Finance **2**, 24-30 (February 2002).

37. **Short Time-Scale in** $S\&P\,500$ **Volatility** (with G. Papanicolaou, R. Sircar and K. Sølna). Journal of Computational Finance **6**(4), Summer 2003.

38. **Stochastic Volatility Corrections for Interest Rates Models** (with P. Cotton, G. Papanicolaou and R. Sircar). Mathematical Finance **14**(2), 173-200 (2004).

39. **Singular Perturbations in Option Pricing** (with G. Papanicolaou, R. Sircar and K. Sølna). SIAM Journal on Applied Mathematics **63**(5), 1648-1665 (2003).

40. **Time-reversed refocusing of surface water waves** (with A. Nachbin). SIAM Journal Multiscale Modeling and Simulation **1**(4), 609-629 (2003).

41. **Maturity Cycles in Implied Volatility** (with G. Papanicolaou, R. Sircar and K. Sølna). Stochastics & Finance **8**(4), 451-477 (2004).

42. **Time-reversal aperture enhancement** (with K. Sølna). SIAM Journal Multiscale Modeling and Simulation **1**(2), 239-259 (2003).

43. **Stochastic Volatility and Correction to the Heat Equation** (with G. Papanicolaou and R. Sircar). Seminar on Stochastic Analysis, Random Fields and Applications IV (Ed. by R. Dalang, M. Dozzi and

F. Russo). Progress in Probability 58, Birkhäuser Verlag, 267-276 (2004).

44. **Pricing Asian Options with Stochastic Volatility** (with C.H. Han). Quantitative Finance **3**(5), 352-362 (October 2003).

45. **Time-reversal numerical simulations for randomly layered media** (with M. Haider and K. Mehta) . Waves in Random Media Vol. 14(2), p.185-198, (2004).

46. **Time reversal for dispersive waves in random media** (with J. Garnier and A. Nachbin). SIAM Journal on Applied Mathematics **64**(5), 1810-1838, (2004).

47. **Multiscale Stochastic Volatility Asymptotics** (with G. Papanicolaou, R. Sircar and K. Sølna). SIAM Journal Multiscale Modeling and Simulation **2**(1), 22-42 (2003).

48. **MCMC Estimation of Multiscale Stochastic Volatility Models** (with G. Molina and C.H. Han). Submitted 2003, revised 2004. Handbook of Quantitative Finance and Risk Management. Editors C.F. Lee and A.C. Lee, Springer 2008.

49. **Shock structure due to stochastic forcing and the time reversal of nonlinear waves** (with J. Garnier and A. Nachbin). Physica D, Vol. **195**, 324-346 (2004).

50. **Robustness of time reversal for waves in time-dependent random media** (with D. Alfaro Vigo, J. Garnier and A. Nachbin). Stochastic Processes and Their Applications **113**(2), 289-313 (2004).

51. **Time reversing solitary waves** (with J. Garnier, J.C. Muñoz Grajales and A. Nachbin). Physical Review Letters, Vol. **92**, 094502 (2004).

52. **Asian Options under Multiscale Stochastic Volatility** (with C.H. Han). Proceedings of the AMS-IMS-SIAM Summer Conference on Mathematics of Finance, AMS Contemporary Mathematics **351**, Eds G. Yin and Q. Zhang, 2004.

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