Publications of George Papanicolaou

Department of Mathematics
Stanford University
Stanford CA 94305
Phone: (650)7232081 Fax: (650)7254066
Internet: papanicolaou@stanford.edu
URL: http://georgep.stanford.edu

January 30, 2005

1. "Wave Propagation in a One-Dimensional Random Medium" SIAM J. Appl. Math. 21 (1971) pp. 13-18.

2. "Stochastic Differential Equations with Applications to Random Harmonic Oscillators and Wave Propagation in Random Media" (with J. B. Keller), SIAM J. Appl.Math. 21 (1971) pp. 287-305.

3. "Mean Power Transmission Through a Slab of Random Medium" (with J.A. Morrison and J.B. Keller), CPAM, XXIV (1971) pp. 473- 489.

4. "Motion of a Particle in a Random Field" J. Math. Phys.12 (1971) pp. 1494-1496.

5. "Non-Commuting Random Evolutions, and an Operator-Valued Feynman-Kac Formula" (with R. Hersh), CPAM 25 (1972) pp. 337-367.

6. "Some Limit Theorems for Stochastic Equations and Applications" (with R. Hersh), Indiana Univ. Math.J. 21 (1972) pp. 815-840.

7. "Stochastic Equations and Their Application," Amer. Math. Monthly (invited paper) 80 (1973) pp. 526-545.

8. "Some Problems and Methods for the Analysis of Stochastic Equations," SIAM-AMS Proceedings, Vol. VI (eds.:J.B. Keller and H.P. McKean) Providence, R.I. (1973) pp. 21-34.

9. "The Geometry of Coupled Mode Propagation in One-Dimensional Random Media" (with R. Burridge), CPAM,XXV (1972) pp. 715-757.

10. "A Kinetic Theory for Power Transfer in Stochastic Systems" J. Math. Phys. 13 (1972) pp. 1912-1918.

11. "A Stochastic Gaussian Beam" (with D. McLaughlin and R. Burridge), J. Math. Phys. 14 (1973) pp.84-89.(also ERRATUM)

12. "A Solution of Differential Equations on the Sphere and Lobachevsky Plane by Descent" (with D.McLaughlin and R. Burridge), CPAM 26 (1973) pp. 105-129.

13. "A Limit Theorem with Strong Mixing in Banach Space and Two Applications to Stochastic Differential Equations" (with S.R.S. Varadhan), CPAM, XXVI (1973) pp. 497-524.

14. "Power statistics for wave propagation in one dimension and comparison with radiative transport theory" (with W. Kohler), J. Math. Phys. 14 (1973) pp. 1733-1745. (I)

15. "Power statistics for wave propagation in one dimension and comparison with radiative transport theory II" (with W. Kohler), J. Math. Phys. 15 (1974) pp. 2186-2197.

16. "Asymptotic theory of mixing stochastic ordinary differential equations" (with W. Kohler), CPAM 27 (1974) pp. 641-668.

17. "Asymptotic analysis of transport processes" Bulletin of A.M.S. 81 (1975) pp. 330-392.

18. "Transport equations for the Stokes parameters from Maxwell's equations in a random medium" (with R. Burridge), J. Math. Phys. 16 (1975) pp. 2074-2085.

19. "Boundary layers and homogenization of transport processes" (with A. Bensoussan and J.L. Lions),J. Publ. of RIMS, Kyoto Univ., Kyoto, Japan, Vol. 15, 1 (1979) pp. 53-157.

20. "Asymptotic analysis of deterministic and stochastic equations with rapidly varying components" (with W. Kohler), Comm. Math. Phys. 45 (1975) pp. 217-232.

20a. Review of "An introduction to invariant imbedding" by R. Bellman and G.M. Wing, John Wiley and Sons, New York 1975, xv+250pp. (Book Reviews, November 1975, pp. 1044-45)

21. "Power reflection from a lossy one-dimensional random medium" (with W. Kohler), SIAM J. on Appl. Math. 30 (1976) pp. 263-268.

22. "Wave propagation in a randomly inhomogeneous ocean" (with W. Kohler), Proceedings of New London Meeting, November, 1974 (eds.: J.B. Keller and J.S. Papadakis) Springer Lecture Notes in Physics No. 70, 1977.

23. "Some Bernstein-type Operators" Amer. Math. Monthly 82 (1975) 674-677.

23a. "Fluctuations in the Navier-Stokes Equations" (with C. Foias), unpublished manuscript.

24. "Some probabilistic problems and methods in singular perturbations" Rocky Mountain Math. J. 6 (1976) pp. 653-674.

25. "Introduction to the asymptotic analysis of stochastic equations" in A.M.S. Book Series: Lectures in Applied Mathematics, Vol. 16, Providence, R.I. (1977) PP. 109-148.

26. "Sur quelques phenomenes asymptotiques stationnaires" (with A. Bensoussan and J.L. Lions) C. R. Acad. Sc. Paris, t. 281, Serie A : 21 juillet 1975 pp. 89-93; 8 septembre 1975, pp. 317-322; 19 janvier 1976, pp. 143-147; 14 juin 1976, pp. 1277-1282.

26a. "Homogenization of Operators not in Divergence Form" (with A. Bensoussan and J.L. Lions), Int'l. J. App. Analysis, Vol. 1, No. 1 (1977) pp. 54-70.

27. "Martingale approach to some limit theorems" (with D. Stroock and S.R.S. Varadhan), in "Statistical Mechanics, Dynamical Systems and the Duke Turbulence Conference," by D. Ruelle, Duke Univ. Math. Series, Vol. 3, Durham, N.C., 1977.

27a. Kushner: Probability methods for approximations in stochastic control and for elliptic equations. Book Reviews, Bull. Am. Math. Soc. 84 (1978) 262-266.

28. "Fluctuation phenomena in underwater sound propagation I, II" (with W. Kohler, in Stochastic Differential Equations and Applications, J. D. Mason, editor, Academic Press, New York, 1977, pp. 45-144.

29. "Stability and control of systems with wide-band noise disturbances I," (with G. Blankenship), SIAM J. Appl. Math. 34 (1978), pp. 437-476.

30. "Homogenization in deterministic and stochastic problems" (with A. Bensoussan and J.L. Lions), in Stochastic Problems in Dynamics, B.L. Clarkson, ed., Pitman, London, 1977, pp. 106-115.

31. "Heat conduction in a one-dimensional random medium" (with J.B. Keller and J. Weilenmann), CPAM 32 (1978) pp. 583-592.

32. "Asymptotic Analysis of Stochastic Equations," in MAA Studies No. 18: Studies in Probability Theory, Murray Rosenblatt, editor, Math. Assoc. America, 1978, pp. 111-179.

33. "Homogenization and Ergodic Theory" (with A. Bensoussan and J.L. Lions), papers presented at Stefan Banach International Mathematical Center at the Semester "Probability Theory," 1976, Ed. by Z. Ciesielski, Warszawa PWN, 1979, pp. 15-25.

34. "Boundary layer analysis in homogenization of diffusion equations with Dirichlet conditions in the half space" (with A. Bensoussan and J.L. Lions), Proc.of Intern. Symp. SDE, Kyoto 1976, pp. 21-40, edited by K. Ito, J. Wiley, New York, 1978.

35. "Asymptotic Analysis for Periodic Structures" (with A. Bensoussan and J.L. Lions), North Holland, 1978. (BOOK)

36. "Stability and control of stochastic systems with wide-band noise disturbances" (with G. Blankenship), Proceedings of the 14th Annual Allerton Conference (1976), T.N Trick and M.E. Valkenburg,eds., Univ. of Illinois, Urbana, Ill., pp. 832-840.

37. "Probabilities of large deviations for stochastic equations and applications," Proceedings of 15th Allerton Conference, 1977, Univ. of Illinois, Urbana, Ill., pp. 44-51.

38. "Asymptotics for branching transport processes" (with A. Bensoussan and J.L. Lions), Proceedings of IRIA Congress, December, 1977, in Springer Lecture Notes in Mathematics #704 (1979), pp. 317-329.

39. "A limit theorem for turbulent diffusion" (with H. Kesten), Proceedings of Rome Conference on Statistical Mechanics, Springer Lecture Notes in Physics #80 (1978), pp. 371-374. [A somewhat abridged and different version of #42]

40. "Boundary behavior of branching transport processes," in Stochastic Analysis, A. Friedman and M. Pinsky, eds., Academic Press, New York, 1978, pp. 215-237.

41. "The Fluid Dynamical Limit of a Model Boltzmann Equation" (with R. Caflisch), CPAM 32 (1979) pp. 589-6l6.

42. "A Limit Theorem for Turbulent Diffusion" (with H. Kesten), Comm. Math. Phys. 65 (1979) pp. 97-128.

43. "Wave Propagation and Heat Conduction in a Random Medium," Stochastic Differential Equations, CIME 1978, J.P. Cecconi, editor, Liguori Editore, Napoli, Italy, pp. 193-218.

44. "Transport Equations for Waves in Random Media," International Symposium on Antennas and Propagation, Washington, D.C., 1978, New York IEEE (1978), pp. 165-167.

45. "Asymptotic Methods in Stochastic Differential Equations and Applications," 17th IEEE Conference on Decision and Control, January 10-12, 1979, San Diego, Calif., pp. 997-1000.

46. "Diffusion in regions with many small holes" (with S.R.S. Varadhan), in Proceedings of Vilnius Conference in Probability, B. Grigelionis, ed., Springer Verlag, Lecture Notes in Control and Information Sciences #25, pp. 190-206, 1980.

47. "Boundary value problems with rapidly oscillating random coefficients" (with S.R.S. Varadhan), at Proceedings of Conference on Random Fields, Esztergom, Hungary, 1979, published in Seria Colloquia Mathematica Societatis Janos Bolyai, 27, pp. 835-873, North Holland, 198l.

48. "Boundary and Interface Problems in Regions with Very Rough Boundaries" (with W. Kohler and S.R.S. Varadhan), in Multiple Scattering and Waves in Random Media edited by Chow, Kohler and Papanicolaou, North Holland, 1981, 165-197.

49. "Stochastically perturbed bifurcation," Proceedings of IRIA Congress, 1979; R. Glowinski and J.L. Lions, eds., Computing Methods in Appl. Science and Eng., North Holland, pp. 659-674 (1980).

50. "Buckling of randomly imperfect beams" (with W. Day and A. Karwowski), Acta Applicandae Mathematicae, 17 (1990) pp. 269-286.

51. "Remarks on limit theorems for partial differential equations with random coefficients," Proceedings of conference on mathematical methods in biology, Heidelberg, Germany, 1979, published by Springer Verlag, Lecture Notes in Biomathematics 38 (1980) pp. 468-470.

52. "A Limit Theorem for Stochastic Acceleration" (with H. Kesten), Comm. Math. Physics 78 (1980) pp. 19-63.

53. "Effective Parameters and Fluctuations for Boundary Value Problems," Transactions of the 25th Conference of Army Mathematicians (1979). ARO Report 80-1, pp. 733-744.

54. "Electromagnetic problems in composite materials in linear and nonlinear regimes," in Nonlinear Electromagnetics, edited by P.G. Uslenghi, Academic Press, 1980, pp. 253-262.

55. "Diffusion with random coefficients" (with S.R.S. Varadhan), in Essays in Statistics and Probability, edited by G. Kallianpur, P.R. Krishnaiah and J.K. Ghosh, North Holland, 1982, pp. 253-262.

56. "Mean field and Gaussian approximation for partial differential equations with random coefficients" (with R. Figari and E. Orlandi), SIAM J. Appl. Math., 42 (1982), 1069-1077.

57. "On the asymptotic behavior of motion in random flows" (with O. Pironneau), in Stochastic Nonlinear Systems, edited by L. Arnold and R. Lefever, Springer, 1981, pp. 36-4l.

58. "Some applications of the coherent potential approximation" (with W. Kohler), in Multiple Scattering and Waves in Random Media, edited by Chow, Kohler and Papanicolaou, North Holland, 1981, 199-223.

59. "A projection method applied to diffusion in a periodic structure" (with M. Vogelius), SIAM J. Appl. Math., 42 (1982) 1302-1322.

60. "Gravity waves in a channel with rough bottom" (with R. Rosales), Studies in Appl. Math., 68 (1983), 89-102.

61. "Convection of microstructure" (with D. McLaughlin and O. Pironneau), INRIA Congress 1981, Comp. Meth. in Appl. Sci. and Eng., Glowinski-Lions, editors, North Holland 1982, pp. 569-590 (Abbreviated version in Macrosc. Prop. Disord. Media, Springer Lecture Notes in Physics #154 (1982), pp. 177-182).

62. "Nonlinear evolution of data with microstucture and applications" ARO Report 83-1, 1983 pp. 1-4.

63. "Dynamical theory of suspensions with Brownian effects" (with R. Caflisch),SIAM J. Appl. Math. 43,(1983) pp.885-906.

64. "The focusing singularity of the cubic Schroedinger equation" (with D. McLaughlin P. and M. Weinstein) in Japan-USA symposium proceedings in Lecture Notes in Numerical Analysis 5, North Holland 1982, pp. 253-257.

65. "Nonlinear equation governing flow in a saturated porous medium" (with D.Joseph and D. Nield), Water Resources Research, 18 (1982) 1049-1052.

66. "Dynamics of suspensions with Brownian effects" (with R. Caflisch) in Theory of Dispersed Multiphase Flow, R. Mayer editor, Academic Press, 1983, pp. 73-79.

67. "Bounds for effective conductivity of random media," (with W. Kohler), in Macroscopic Properties of Disordered Media, Burridge, Childress and Papanicolaou editors, Springer Lecture Notes in Physics #154, 1982, pp. 111-130.

68. "Bounds for effective parameters of heterogeneous media by analytic continuation" (with K. Golden), Comm. Math. Phys., 90, 1983, pp.473-491.

69. "Effective Parameters for Periodic and Random Media and Applications", American Nuclear Society Transactions 43 (1982), pp. 403-404.

70. "Convection of Microstructure and Related Problems" (with D.W. McLaughlin and O. Pironneau), SIAM J Appl Math 45 (1985) pp. 780-797.

71. "Diffusion and Random Walks in Random Media." Proceedings of conference at the Institute for Mathematics and its Applications, University of Minnesota, Math. and Phys. of disorderd media B.D.Huges and B.Ninham eds.Springer Lecture Notes in Math. 1035, 1983, pp.391-399

72. "Effective equations for wave propagation in bubbly liquids" (with Caflisch, Miksis and Ting), J. Fluid Mechanics, 153 (1985) 259-273

73. "Diffusive behavior of a random walk in a random medium" (with Figari and Orlandi), in "Stochastic Analysis" by K. Ito, North Holland, 1984, pp.105-120

74. "Macroscopic properties of composites, bubbly fluids, suspensions and related problems", in Les methodes de l'homogeneization:Theorie et applications en physique, CEA-EDF- INRIA series vol 57, Eyrolles, Paris, 1985, pp.229-318

75. "A Random Wave Process"(with D. Dawson) Appl. Math. Optim. 12, 1984, pp. 97-114.

76. "Interactions between mean flow and finite amplitude mesoscale eddies in a barotropic ocean"(with B. Cushman Roisin and D. McLaughlin) Geophys. Astrophys. Fluid Dynamics, 29 (1984), 333-353.

77. "Wave propagation in bubbly liquids at finite volume fraction"(with Caflisch Miksis and Ting) J. Fluid Mechanics, 160 (1985) pp. 1-14.

78. "Bulk diffusion for interacting Brownian particles" (with M. Z. Guo) in Statistical Physics and Dynamical Systems: Rigorous results, J. Fritz, A. Jaffe and D. Szasz editors, Birkhauser 1985 pp. 41-48.

79. "Bounds for effective parameters of multicomponent media by analytic continuation" (with K. Golden) J. Stat. Phys. 40 (1985) pp. 655-668.

*80. "Limit theorems for inhomogeneous particle systems" (with M Z Guo) unpublished

81. "Waves in bubbly liquids" (with Caflisch, Miksis and Ting) in homogenization and effective moduli of materials and media, J. L. Ericksen et al, editors, Springer 1986 pp. 175-181.

82. "Statistics for pulse reflection from a randomly layered medium" (with R. Burridge and B. White) SIAM J. Appl. Math. 47 (1987) pp. 146-168. (Short version in Lecture Notes in Math. 1186, L. Arnold editor, Springer, 1986 pp. 265-270.)

83. "Asymptotic analysis of the Lyapounov exponent and rotation number of the random oscillator and applications" (with Arnold and Wihstutz) SIAM J. Appl. Math. 46 (1986) pp. 427-450

84. "Random matrices and waves in random media" Contemporary Mathematics vol 50, J.E.Cohen, H.Kesten and C.Newman eds. American Math. Society, 1985 pp. 311-317.

85. "Random media and selfdiffusion of interacting particles" (with M. Z. Guo) Contemporary Mathematics vol 41, R. Durrett editor, Amer. Math. Society, 1985 pp. 195-206.

86. "Ornstein-Uhlenbeck process in a random potential" (with S. R. S. Varadhan) Comm. Pure Appl. Math. 38 (1985) pp. 819-834.

87. "Weak limits of semilinear hyperbolic equations with oscillating data" (with D. McLaughlin and L. Tartar) Springer Lecture Notes in Physics 230 (1985) pp. 277-289.

88. "Focusing singularity of the nonlinear Schroedinger equation" (with D. McLaughlin, P.-L. Sulem and C. Sulem) Phys. Rev. A 34 Number 2 (1986) pp.1200-1210.

89. "Self diffusion of interacting Brownian particles" (with M. Z. Guo) in "Probabilistic Methods in Mathematical Physics" edited by K. Ito and N. Ikeda, Kinokuniya , Tokyo 1987, 113-151.

90. "The spectrum of backscatter for pulse reflection from a randomly stratified medium" (with R. Burridge and B. White) Springer Lecture Notes IMA (Univ. Minnesota) vol. 7 (1987) edited by G. Papanicolaou, pp. 29-44.

91. "One dimensional wave propagation in a highly discontinuous medium" (with R. Burridge and B. White) Wave Motion, 10 (1988) pp. 19-44.

92. "Multiple scattering noise in one dimension: universality through localization length scaling" (with P. Sheng, B. White and Z.-Q. Zhang), Phys. Rev. Letters 57, (1986), pp. 1000-1003.

93. "Minimum wave localization length in a one dimensional random medium" (with P. Sheng, B. White and Z.-Q. Zhang) Phys. Rev. B 34 #7, (1986), pp. 4757-4761

94. "The focusing singularity of the nonlinear Schroedinger equation" (with B.Lemesurier, C.Sulem and P.-L. Sulem), in Directions in Partial Differential Equations, Academic Press, 1987, 159-201. M. G. Crandall, P. H. Rabinowitz and R. E. L. Turner editors.

95. "The point interaction approximation for diffusion in regions with many small holes" (with R.Figari and J.Rubinstein) Lecture Notes in Biomathematics, volume 70, Springer, 1987, 202-209, M. Kimura, G. Kallianpur and T. Hida editors.

96. "Direct and inverse problems for pulse reflection from a stratified random halfspace " (with R. Burridge, P. Sheng and B. White) in Advances in multiphase flow and related problems, G. Papanicolaou editor, SIAM publications, 1986, pp. 17-23.

97. "Wave propagation and heat conduction in random media", in Proceedings of International Congress of Mathematicians, Berkeley 1986, vol 2, (1987), pp. 1042-1051.

98. "On the numerical solution of a nonlinear stochastic Helmholtz equation with a multigrid preprocessor" (with K. Jordan and R. Spigler) Appl. Math. and Computation, 19, (1986), pp. 145-157.

99. "Focusing and Multifocusing solutions of the Nonlinear Schroedinger equation" (with B. LeMesurier, C. Sulem and P. -L. Sulem) Physica D, 31, (May 1988), pp. 78-102.

*100. "Effective properties of hierarchical models of composites" (with M. Avellaneda) unpublished manuscript.

101. "Pulse reflection by random media" (with Burridge, Sheng and White) in "Non-Classical Continuum Mechanics" J. R. Knopps and A. A. Lacey editors, Cambridge University Press, 1987, pp. 3-21.

102. "Waves in one-dimensional random media" J. L. Lions anniversary volume, in Analyse Mathematique et Applications, Gauthier-Villars, Paris, 1988, pp. 421-435.

103. "Probing a random medium with a pulse" (with Burridge, Sheng and White) SIAM J. Appl. Math, 49, (1989), pp. 582-607.

104. "Wave localization characteristics in the time domain" (with Sheng, White and Zhang) Phys. Rev. Letters, 59, (Oct. 26 1987), pp. 1918-1921.

105. "Local structure of the self focusing singularity of the nonlinear Scroedinger equation" (with B. Lemesurier, P. L. Sulem and C. Sulem) Physica D, 32, (1988), pp. 210-226.

106. "Rate of blow up for solutions of the nonlinear Schroedinger equation at critical dimension" (with M. Landman, P. L. Sulem and C. Sulem) Physical Review A, 38, (1988) pp. 3837-3843.

107. "Nonlinear diffusion limit for a system with nearest neighbor interactions" (with M. Z. Guo and S. R. S. Varadhan) Communications of Mathematical Physics, 118, (1988) pp. 31-59.

108. "Frequency content of randomly scattered signals I" (with Asch, Postel, Sheng and White) Wave Motion, vol 12, (1990) pp. 429-450.

109. "Frequency content of randomly scattered signals part II: Inversion" (with Postel, Sheng and White) Wave Motion, vol 12, (1990) pp. 527-549.

110. "Reflection of waves generated by a point source over a randomly layered medium" (with Kohler and White) Wave Motion, vol 13, (1991) pp. 53-87.

111. "Wave localization and multiple scattering in randomly layered media" (with Sheng, White and Zhang) in "Scattering and Localization of Classical Waves in Random Media", Ping Sheng editor, World Scientific , 1990 pp. 563-619.

112. "Nonlinearity and Localization in One Dimensional Random Media" (with Knapp and White) in "Disorder and Nonlinearity", A. R. Bishop, D. K. Campbell and S. Pnevmaticos editors, Springer Proceedings in Physics, vol. 39, (1989), pp. 2-26.

113. "Probing through cloudiness: Theory of statistical inversion for multiply scattered data" (with Postel, Sheng and White) Phys. Rev. Letters, 63, (1989), pp. 2228-2231.

114. "Finite difference approximations for partial differential equations with rapidly oscillating coefficients" (with Avellaneda and Hou) Mathematical Modelling and Numerical Analysis, vol 25, (1991), pp. 693-710.

115. "A vortex method for fluid particle systems" (with Zhu) Comm. Pure Appl. Mathematics, 44, (1991), pp. 101-120.

116. "Stability of Isotropic Singularities for the Nonlinear Schroedinger Equation" (with Landman, Sulem, Sulem and Wang) Physica D, vol 47, (1991), pp. 393-415.

117. "Reflection of Pulsed Electromagnetic Waves From a Randomly Stratified Half Space" (with Kohler, Postel and White) Journal of the Optical Society of America A, vol 8, (1991), pp. 1109-1125.

118. "The long time behavior of a vectorized boundary element code for water wave problems" (with Andre Nachbin) in "Advances in Boundary Elements", vol 2, C. A. Brebbia and J.J Connor editors, Springer 1989, pp. 283-293.

119. "Water waves in shallow channels of rapidly varying depth" (with A. Nachbin) JFM, vol 241, (1992), pp. 311-332. Also "Water waves in disordered media", in Comp. Appl. Math. vol 13, no. 3, (1994), pp. 235-245.

120. "Numerical asymptotics for water wave problems" (with A. Nachbin), International Journal for Numerical Methods in Fluids, vol 14, (1992), pp. 1347-1365.

ALL PAPERS FROM HERE ON ARE ON THE WEB PAGE
http:/georgep.stanford.edu
EXCEPT WHERE INDICATED THAT THEY ARE NOT

121. "A functional limit theorem for waves reflected by a random medium" (with S. Weinryb), Applied Mathematics and Optimization, vol 30, (1994), pp. 307-334.

122. (Not on the web) "Transmission of waves by a nonlinear random medium" (with R. Knapp and B. White) J. Stat. Physics, vol 63, (1991), pp. 567-584.

123. "Frequency content of randomly scattered signals" (with Asch, Postel, Kohler and White), Siam Review, vol 33, (1991), pp. 519-626.

124. (Not on the web) "Singular solutions of the Zakharov equations for Langmuir turbulence" (with C. Sulem, P. L. Sulem and X. P. Wang) Physics of Fluids B, vol 3, (1991), pp. 969-980.

125. (Not on the web) "Computation of local power spectra by the windowed Fourier transform" (with Asch, Kohler, Postel and White), in proceedings of IMA conference on signal processing, 1991, 'New Directions in Time Series', Brillinger et al editors, IMA series vol. 45, Springer 1992, pp. 1-7.

126. "Reaction diffusion fronts in periodically layered media" (with X. Xin), J. Stat. Phys., 63, (1991), pp. 915-932.

127. "A wavelet based space-time adaptive numerical method for partial differential equations" (with E. Bacry and S. Mallat), Mathematical Modeling and Numerical Analysis, 26, (1992), pp. 793-834.

128. (Not on the web) "Stability of isotropic self-similar dynamics for scalar wave collapse" (with Landman, C. Sulem, P.L. Sulem and Wang), Phys Rev A, 46, (1992), pp. 7869-7876.

129. "Convection enhanced diffusion for periodic flows" (with Fannjiang), SIAM Journal on Applied Mathematics, 54, (1994) pp. 333-408.

130. "Reflection of wave fronts by randomly layered media" (with Lewicki), Wave Motion, 20, (1994) pp. 245-260.

*131. (Not on the web) "Modulational stability of periodic solutions of the Kuramoto-Sivashinsky equation" (with Papageorgiou and Smyrlis), preprint.

132. (Not on the web) "The focusing singularity of the Davey-Stewartson equation for gravity capilary surface waves" (with P-L Sulem C Sulem and Wang), Physica D, 72, (1994) pp. 61-86.

133 "Pulse stabilization in a strongly heterogeneous layered medium" (with Burridge and Lewicki), Wave Motion, 20, (1994) pp. 177-195.

134 “Reflection and transmission of acoustic waves by a locally-layered slab” (with W. Kohler and B. White). In: Diffuse Waves in Complex Media, edited by Jean-Pierre Fouque, Math and Physical Sciences Series vol 531, (1999), Kluwer, The Netherlands, pp. 347-382.

135 “Diffusion in turbulence” (with A. Fannjiang) Probability Theory and Related Fields, 105, (1996) pp. 279-334.

136 “Convection enhanced diffusion for random flows” (with A. Fannjiang), Journal of Statistical Physics, 88, (1997), pp. 1033-1076.

137 “Flow past periodic arrays of spheres at low Reynolds number” (with Hongwei Cheng), Journal of Fluid Mechanics, 335, (1997) pp. 189-212.

*138 (Not on the web) “Self-focusing of strong laser pulses” (with V. Malkin), Preprint November 1993.

139 “Statistical inversion from reflections of spherical waves by a randomly layered medium” (with Asch, Postel, White and Kohler). Waves in Random Media, 6 (1996) pp. 293-334.

140 “Localization and mode conversion for elastic waves in randomly layered media I,II” (with White and Kohler) Wave Motion, 23, (1996) pp. 1-22 and 181-201.

141 “Motion in a Gaussian, Incompressible Flow” (with T. Komorowski) The Annals of Applied Probability, 7, (1997) pp. 229-264.

142 “Beam Self-Focusing in the Presence of Small Normal Time Dispersion” (with G. Fibich and V. Malkin) Phys. Rev. A. 52, (1995), pp. 4218-4228.

143 “Network approximation for transport properties of high contrast materials” (with L. Borcea), SIAM J. Appl. Math, 58, (1998), pp. 501-539.

144 “A hybrid numerical method for high contrast conductivity problems” (with L. Borcea), Journal of Computational and Applied Mathematics, 87, (1997), pp. 61-77.

145 “Transport equations for elastic and other waves in random media” (with L. Rhyzik and J.B.Keller) Wave Motion 24, (1996), pp. 327-370.

146 “Stability of the P to S energy ratio in the diffusive regime” (with L. Ryzhik and J.B.Keller), Bulletin of the Seismological Society of America 86, (1996), pp. 1107-1115.

147 “Diffusion in Random Media” in Surveys in Applied Mathematics, edited by J.B.Keller, D.McLaughlin and G. Papanicolaou, Plenum Press, 1995, pp. 205-255.

148 “Adaptive Covariance Estimation of Locally Stationary Processes” (with Stephane Mallat and Zhifeng Zhang), ‘Annales of Statistics’, 26, (1998), pp. 1-47.

149 “High Contrast Impedance Tomography” (with Liliana Borcea and James Berryman), Inverse Problems 12, (1996), pp. 1-24.

150 “General Black-Scholes models accounting for increased market volatility from hedging strategies” (with R. Sircar), Applied Mathematical Finance, 5, (1998), pp. 45-82.

151 “Transport equations for waves in a half space” (with L. Ryzhik and J.B.Keller), Communications in PDE 22, (1997), pp. 1869-1910.

152 “Stochastic Volatility, Smile and Asymptotics” (with R. Sircar), Applied Mathematical Finance, 6, (1999), pp. 107-145.

153 “Forward and Markov Approximation: The Strong Intensity Fluctuations Regime Revisited” (with J.P. Fouque and Y. Samuelides), ‘Waves in Random Media’, 8, (1998), pp. 303-314.

154 “Evolution of trajectory correlations in steady random flows” (with Albert Fannjiang and Leonid Ryzhik), In ‘Proceedings of Symposia in Applied Mathematics’, Volume 54, R. Spigler and S. Venakides editors, American Mathematical Society, (1998), pp. 105-130.

155 “Self-Focusing in the Presence of Small Time Dispersion and Nonparaxiality” (with G. Fibich), Optics Letters, 22, 1379 - 1381, 1997

156 “Self-focusing in the perturbed and unperturbed nonlinear Schrödinger equation in critical dimension” (with G. Fibich), SIAM Journal on Applied Mathematics 60, (2000), pp. 183-240.

157 “A modulation method for self-focusing in the perturbed critical nonlinear Schrödinger equation” (with G. Fibich), ‘Physics Letters A’, 239, (1998) pp. 167-173.

158 (Not on the web) “Waves and Transport” (with L. Ryzhik), IAS/PARK CITY Mathematics Series Vol. 5, L. Caffarelli and Weinan E editors, AMS 1998, pp. 305-382.

159 “Matching pursuit for imaging high contrast conductive media” (with L. Borcea and J. Berryman), Inverse Problems, 15, (1999), pp. 811-849.

160 “The invariand density of a chaotic dynamical system with small noise” (with R. Kuske), Physica D, 120, (1998), pp. 255-272.

161 “Segmentation independent estimates of turbulence parameters” (with K. Solna and D. Washburn). In ‘Airborne Laser Advanced Technology’, Todd D. Steiner and Paul H. Merritt, Editors, Proceedings of SPIE, Vol. 3381, (1998), pp. 256-267.

162 “Asymptotics of a Two-Scale Stochastic Volatility Model” (with Jean-Pierre Fouque and K. Ronnie Sircar). Equations aux derivees partielles et applications, Articles dedies a Jacques-Louis Lions, Gauthier-Villars, Paris, 1998, pp. 517-526.

163 “Wavelet based estimation of local Kolmogorov turbulence” (with K. Solna). In ‘Long-range Dependence Theory and Applications’, edited by P. Doukhan, G. Oppenheim, and M. S. Taqqu, Birkhauser 2003, pp. 473-505.

164 “Transport theory for acoustic waves with reflection and transmission at interfaces” (with G. Bal, J.B. Keller and L. Ryzhik), Wave Motion, 30, (1999), pp. 303-327.

165 “Soliton perturbations and the random Kepler problem” (with J. Bronski and F. Abdullaev), Physica D, 135, (2000), pp. 369-386.

166 “Mathematical Problems in Geophysical Wave Propagation”, Proceedings of the International Congress of Mathematicians, in ‘Documanta Mathematica’, Extra Volume ICM 98 I, pp. 241-265, Berlin 1998.

167 “Radiative Transport in a Periodic Structure”, (with G. Bal, A. Fannjiang and L. Ryzhik). Journal of Statistical Physics, 95, (1999), pp. 479-494.

168 “Mean Reverting Stochastic Volatility”, (with Jean-Pierre Fouque and K. Ronnie Sircar), International Journal of Theoretical and Applied Finance, 3, (2000), pp. 101-142. A short version of this paper is: “Financial Modeling in a Fast Mean-Reverting Stochastic Volatility Environment”, (with Jean-Pierre Fouque and K. Ronnie Sircar), Asia-Pacific Financial Markets, 6, (1999), pp. 37-48.

169 Ray Theory for a Locally Layered Random Medium, (with K. Solna), Waves in Random Media, vol 10, (2000), pp. 155-202.

170 “Probabilistic Theory of Transport Processes with Polarization”, (with G. Bal and L. Ryzhik), SIAM Journal on Applied Mathematics, vol 60, (2000), pp. 1639-1666.

171 “High frequency behavior of the focusing nonlinear Schroedinger equation with random inhomogeneities”, (with A. Fannjiang and Shi Jin). SIAM Journal on Applied Mathematics, 63, (2003), 1328-1358.

172 “Stochastic volatility correction to Black-Scholes”, (with J.-P. Fouque and R. Sircar), Risk, vol 13 No.2, February 2000, 89-92.

173 “Wave transport along surfaces with random impedance”, (with G. Bal, V. Freilikher and L. Ryzhik). Physical Review B, vol 62, (2000), 6228-6240.

174 “Low frequency electromagnetic fields in high contrast media”, (with L. Borcea), In ‘Surveys on Solution Methods for Inverse Problems’ edited by D. Colton, H.W. Engl, A.K. Louis, J.R. McLaughlin and W. Rundell, Springer-Verlag, (2000), pp. 195-233.

175 “A Nonlinear Inversion Method for 3D-Electromagnetic Imaging Using Adjoint Fields”, (with O. Dorn, H. Bertete-Aguirre and J. Berryman), Inverse Problems, 15, (1999), pp. 1523-1558.

176 “Short time-scale in S&P 500 volatility”, (with Jean-Pierre Fouque, K. Ronnie Sircar and K. Solna), Journal of Computational Finance, 6, (2003), pp. 1-23.

177 “From the Implied Volatility Skew to a Robust Correction to Black-Scholes American Option Prices”, (with Jean-Pierre Fouque, and K. Ronnie Sircar), International Journal of Theoretical and Applied Finance, 4, (2001), pp. 651-675.

178 “Eddy viscosity of cellular flows”, (with Alexei Novikov), Journal of Fluid Mechanics, 446, (2001), pp. 173-198.

179 “Super-Resolution in Time-Reversal Acoustics”, (with P. Blomgren and H. Zhao). Journal of the Acoustical Society of America, 111, (2002), pp. 230-248.

180 “Variational principles for propagation speeds in inhomogeneous media”, (with S. Heinze and A. Stevens), SIAM Journal on Applied Mathematics, 62, (2001), pp. 129-148.

181 “Depolarization and blurring of optical images by biological tissues”, (with M. Moscoso and J.B. Keller), Journal of the Optical Society of America A, 18, (2001), pp. 948-960.

182 “Time reversal through a solid-liquid interface and super-resolution”, (with Chrysoula Tsogka), Inverse Problems, 18, (2002), pp. 1639-1657.

183 “Imaging and time reversal in random media”, (with Liliana Borcea, Chrysoula Tsogka and James Berryman). Inverse Problems, 18, (2002), pp. 1247-1279.

184 “Statistically stable ultrasonic imaging in random media”, (with James Berryman, Liliana Borcea and Chrysoula Tsogka), Journal of the Acoustical Society of America, 112, (2002), pp. 1509-1522.

185 “Self-averaging in time reversal for the parabolic wave equation”, (with Guillaume Bal and Leonid Ryzhik), Stochastics and Dynamics, 2, (2002), pp. 507-531.

186 “Sensitivity analysis of a nonlinear inversion method for 3D electromagnetic imaging in anisotropic media”, (with O. Dorn, H. Bertete-Aguirre and J. Berryman), Inverse Problems, 18, (2002), pp. 285-317.

187 “Radiative transport limit for the random Schroedinger equation”, (with G. Bal and L. Ryzhik), Nonlinearity, vol 15, (2002), pp. 513-529.

188 “High-order dispersion effects in self-focusing, (with G. Fibich and B. Ilan), SIAM Journal on Applied Mathematics, 62, (2002), pp. 1437-1462.

189 “Stochastic Volatility Corrections for Interest Rate Derivatives”, (with Peter Cotton, Jean-Pierre Fouque and K. Ronnie Sircar). Mathematical Finance, 14, (2004), pp. 173-200.

190 “Singular Perturbations in Option Pricing”, (with Jean-Pierre Fouque, K. Ronnie Sircar and K. Solna). SIAM Journal on Applied Mathematics, 63, (2003), pp. 1648-1681.

191 “Statistical stability in time reversal”, (with Leonid Ryzhik and Knut Solna). SIAM Journal on Applied Mathematics, 64, (2004), pp. 1133-1155.

192 “Maturity cycles in implied volatility”, (with Jean-Pierre Fouque, K. Ronnie Sircar and K. Solna). Finance and Stochastics, 8, (2004), pp. 451-477.

193 “Theory and applications of time reversal and interferometric imaging”, (with Liliana Borcea and Chrysoula Tsogka), Inverse Problems, vol 19, (2003), pp. 5139-5164.

194 “Multiscale Stochastic Volatility Asymptotics”, (with Jean-Pierre Fouque, K. Ronnie Sircar and K. Solna), SIAM Journal on Multiscale Modeling and Simulation, 2, (2003), pp 22-42.

*195 “Predicted Time Reversal Performance in Wireless Communications Using Channel Measurements”, (with S.M. Emami, J. Hansen, A.D. Kim, A.J. Paulraj, D. Cheung and C. Prettie), to appear in IEEE Communications Letters, 2004.

196 “Resolution estimation for imaging and time reversal in scattering media”, (with Liliana Borcea and Chrysoula Tsogka), In ”Mathematical and Numerical Aspects of Wave Propagation WAVES 2003”, G. Cohen, E. Heikkola, P. Joly and P. Neittaanmaeki Editors, Springer, 2003, pp. 631-636.

197 “A resolution study for imaging and time reversal in random media”, (with Liliana Borcea and Chrysoula Tsogka), Contemporary Mathematics, Volume 333, G. Alessandrini and G. Uhlmann editors, AMS, 2003, pp. 63-77.

*198 “Efficient numerical simulation for long range propagation”, (with K. Huang, K. Solna, C. Thogka and H. Zhao). Submitted for publication.

*199 “Low probabilty of intercept and intersymbol interference in multiple-input single-output time reversal communication systems”, (with A. Kim, P. Kyritsi, P. Blomgren). Submitted for publication 2004.

*200 “Boundary layers for cellular flows at high Peclet numbers”, (with Alexei Novikov and Lenya Ryzhik). Comm. Pure and Appl. Math. Oct 2004.

201 “Characterization of space-time focusing in time reversed random fields”, (with C. Oestges, A.D. Kim, A.J. Paulraj). IEEE Trans. Antennas and Prop. 53, (2005), pp 283-293.

202 “Application of time reversal with MMSE equalizer to UWB communications”, (with T. Strohmer, M. Emami, J. Hansen, A.J. Paulraj). IEEE GLOBECOM’04, 5, 29Nov-3Dec 2004, pp 3123-3127.

203 “MISO time reversal and delay spread compression for FWA channels at 5GHz”, (with P. Kyritsi, P. Eggers and A. Opera), Antennas and Wireless Propagation Letters, 3, (2004), 96-99.

*204 “Interferometric array imaging in clutter”, (with Liliana Borcea and Chrysoula Tsogka). Submitted to Inverse Problems.

The book: Derivatives in Financial Markets with Stochastic Volatility by Jean-Pierre Fouque, George Papanicolaou and K. Ronnie Sircar was published by Cambridge University Press in June 2000.