H. METE SONER

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March 20, 2025

ACADEMIC EXPRIENCE

- 2019–present Princeton University Princeton, NJ
  Department of Operations Research and Financial Engineering.
  Norman John Sollenberger Professor and *Chair*, since Feb., 2024
  Program in Applied and Computational Mathematics.
  Bendheim Center for Finance.
- 2009–2019 ETH Zürich Zürich, Switzerland
  Professor of Mathematics, 2009-2019
  Chair, Department of Mathematics*, August 2017-Feb. 2019*
  Vice Chair, Department of Mathematics*, August 2015-July 2017*
  Senior Chair, Swiss Finance Institute, 2010-2019
- 2007–2009 Sabancı University Istanbul, Türkiye
  Işık İnselbağ Professor
- 2000–2007 Koç University Istanbul, Türkiye
  Professor of Mathematics and Finance
  Dean College of Economics and Business Administration, 2002-2007
- 1998–2000 Princeton University Princeton, NJ
  Paul M. Wythes `55 Professor of Finance and Engineering
  Department of Operations Research and Financial Engineering.
  Program in Applied and Computational Mathematics.
  Bendheim Center for Finance.
- 1986–1998 Carnegie Mellon University Pittsburgh, PA
  Professor of Mathematics
  - Prof., 1992, Associate Prof., 1990, Assistant Prof., 1986.
- 1985–1986 Institute for Math. and App. Minneapolis, MN
  Research Associate

EDUCATION

- 1981-1985 Brown University Providence, RI
  - Ph.D. in Applied Mathematics.
  - M.Sc. in Applied Mathematics
- 1977-1981 Boğaziçi University Istanbul, Türkiye
  - Electrical Engineering and Mathematics.
- 1974-1976 Ankara Fen Lisesi Ankara, Türkiye

AWARDS AND HONORS

- Norman John Sollenberger Professor, 2024
- SIAM Fellow, Class of 2015.
- Alexander von Humbolt Foundation Research Award, 2014.
- European Research Council Advanced Grant: Dec. 2008 - Nov. 2013.
- Invited Speaker, Bachelier Finance Society, Tokyo 2006 and Dublin 2018.
- Invited Speaker, European Mathematical Congress, Amsterdam 2008 and Berlin 2016.
- Plenary Speaker, SIAM Conf. on Control and Its App., July 2015, Paris.
- Plenary Speaker, INFORMS, June 2015, Istanbul.
- Plenary Speaker, SIAM Meeting on Financial Engineering,
  Topical Speaker, SIAM Annual Meeting, June 2006, Boston, MA
- Turkish Science and Technology Foundation Science Award, 2002.
- Paul M. Wythes '55 Professor or Finance and Engineering, Princeton University, 1998-2000.

SERVICE TO ACADEMIC COMMUNITY

- Editor-in-Chief, *SIAM Journal of Mathematical Finance,* since *2020*.
- Executive Secretary of the *Bachelier Finance Society,* 2011-2016.
- *Mathematics and Financial Economics* (co-Editor).
- *Mathematics of Operations Research* (Associate Editor).
- *Interfaces and Boundaries* (Associate Editor).
- *Finance & Stochastic*s (Associate Editor) until 2024.

RESEARCH SUPPORT

- National Science Foundation Grant; 2024-2027 for the amount 320,000 US$
- National Science Foundation Grant; 2021-2024 for the amount 285,000 US$,
- Swiss National Science Foundation Grant; 2017-2021 for the amount 1,041,562 CHF
- Swiss National Science Foundation Grant; 2014-2017 for the amount 637,138 CHF
- Swiss National Science Foundation Grant; 2011-2014 for the amount 171,647 CHF
- Swiss Finance Institute; 2009-2019; for the amount 1,000,000 CHF
- European Research Foundation; 2008-2013 for the amount 880,000 Euro.
- ETH Foundation; 2009-2019 (joint with Schweizer and Teichmann) for 5,000,000 CHF.
- Funding in the USA during the period 1986-2000 was obtained from the NSF, Army Research Office and Air Force Office of Research.

RESEARCH TEAM

Post-doctoral fellows at ETH:

- Prof. Chen Yang, (2017-2019), The Chinese University of Hong Kong.
- Prof. Matteo Burzoni, (2016-2019), UBS.
- Dr. Ibrahim Ekren (Sept. 2014- Sept. 2017), University of Michigan.
- Prof. Ariel Neufeld (2017- 2018), NTS, Singapore
- Dr. Ludovic Moreau (Oct. 2012-Oct. 2014),Abeille Assurances, Paris, France.
- Prof. Anja Richter (Jan. 2013-Aug. 2013), Baruch College, New York, USA.
- Dr. Marcus Wunsch (Jan. 2013-Aug. 2013), UBS, Zurich.
- Prof. Yan Dolinsky (Feb. 2010-Sept. 2012), Dept. of Statistics, Hebrew University, Israel.
- Prof. Marcel Nutz (Oct. 2010-Sept. 2011), Dept. of Statistics, Columbia University,, USA.
- Dr. Gilles-Edouard Espinosa (Sept. 2010-Feb. 2011), ENPC (Cermics), Paris, France.
- Prof. Idris Kharroubi (Jan. 2010-June 2010), University of Paris IX, Dauphine, France.
- Prof. Alexandre Roch (Sept. 2009-July 2010), ESG UQAM, Montreal, Canada.

Graduate Students (current):

- Qinxin Yan, PACM, continuing.
- Nicolas Garcia, ORFE, ongoing (joint with Ronnie Sircar),
- Felix Höfer, ORFE, continuing (joint with Emma Hubert)
- Jou Hua Lai, ORFE, continuing, (joint with Misha Shkolnikov).

Graduate Students (completed):

- Dr. Valentin Tissot-Daguette, (ORFE 2024), Bloomberg.
- Dr. Vincenzo Ignazio (joint with Prof. Da Lio), (ETH 2020).
- Dr. Matti Kiiski, (ETH 2019), deceased.
- Prof. Max Reppen, (ETH 2018), Boston University.
- Dr. Thomas Caye, (joint with Prof. Muhle-Karbe))(ETH 2017), Susquehanna International.
- Prof. Sebastian Herrmann, (joint with Prof. Schweizer), (ETH, 2016), U. Manchester.
- Dr. Mario Sikic, (ETH 2016), University of Zurich.
- Dr. Albert Altarovici, (ETH, 2015), Waymo, USA.
- Dr. Mirjana Vukelja, (ETH, 2014), UBS, Zurich.
- Prof. Erdinç Akyildirim, (Swiss Finance Institute, 2013), Akdeniz Uni., Antalya, Türkiye.
- Dr. Selim Gökay (ETH, 2011) UBS, Zurich.
- Dr. Feyzullah Egriboyun (Carnegie Mellon, 2000).
- Prof. Dmitry Golovaty (Carnegie Mellon, 1995) University of Akron, OH, USA.

SELECTED PRESENTATIONS

- 07.2025: Plenary Speaker, SIAM Conference on Mathematical Finance, Miami, FL.
- 08.2024: Plenary Speaker,7th Berlin Workshop on Math Finance for Young researchers, Berlin
- 06.2024: Invited Speaker, Riemann School of Mathematics, Varese, Italy
- 11.2023: Van Eenam Lectures, University of Michigan, Ana Arbor, MI
- 09.2023: Plenary Speaker, HKSIAM Biennial Meeting, Chinese University of Hong Kong
- 11.2022: Mathematics Colloquium, Illinois Institute of Technology, Chicago, IL
- 10.2022: FSU Mathematics Distinguished Lecture, Florida State University, Tallahassee, FL.
- 09.2022: Invited talk, Workshop on Stochastic Control, Quantitative Finance, Jerusalem, Israel.
- 06.2022: Invited Talk, Workshop in Mathematical honoring Walter Shachermayer, Pisa, Italy.
- 11.2021: Distinguished Lectures, The Chinese University of Hong-Kong, Hong-Kong, virtual.
- 01.2021: Invited Speaker, 10th Western Conference on Math. Finance, virtual.
- 04.2020: Webinar, SIAM Activity Group on FME Talk Series, Virtual
- 10.2019: Invited Lecture, , 4th Eastern Conf. on Math. Finance, Boston, MA
- 12.2018: Plenary Speaker, 6th Asian Quantitative Finance Conference, Guangzhou, China
- 06.2018: Plenary Speaker, 10th Bachelier Meeting, Dublin, Ireland
- 09.2017: 2nd Tosun Terzioğlu Memorial Talk, Turkish Math Society, Istanbul, Türkiye
- 09.2017: Inagurial Talk, SFB 1288, Bielfeld, Germany
- 07.2017: Plenary Speaker, Congress on Free Boundaries, Shanghai, China
- 06.2015: Plenary Speaker, SIAM Con. on Control and Its App., Paris, France
- 06.2015: Plenary Speaker, INFORMS App. Prob. Conf., Istanbul, Türkiye
- 04.2013: Noumara Seminar, Oxford, UK
- 09.2012: Invited Speaker, Workshop on Mathematical Finance, Yerevan, Armenia
- 09.2010: Invited Speaker, Workshop on Mathematical Analysis, Istanbul, Türkiye
- 07.2008, Invited Talk, 5th European Congress of Mathematics, Amsterdam, Holland
- 06.2007: Giordana Indham, Pisa, Italy
- 08.2006: Plenary Speaker, 6th Bachelier Meeting, Tokyo, Japan
- 07.2006: Plenary Speaker, SIAM Meeting on Financial Engineering,
  Topical Speaker, SIAM Annual Meeting, June 2006, Boston, MA , Boston, MA
- 04.2003: Cattedra Gelileiana, Scuola Normale, Pisa, Italy
- 07.2002: Summer School on Mathematical Finance, Lisbon, Portugal
- 08.2001: Summer School on Mathematical Finance, Zurich, Switzerland
- 09.2000: Plenary Talk, Ulusal Matematik Sempozyumu, Malatya, Türkiye
- 07.2000: CIR-CIME Summer Course on Evolving Interfaces, Madeira, Portugal
- 01.1999: Annual AMS Meeting, Short course on control, San Antonio, TX
- 06.1997: Plenary Talk, Congress on Free Boundaries, Crete, Greece
- 01.1997: Main Speaker, Recent Advances in Continuum Mechanics, Trento, Italy
- 11.1996: Clifford Lectures, Georgia Tech., Atlanta, GA
- 08.1995: Main Speaker, CRM Summer School, Bannf, Canada
- 06.1995: Main Speaker, CIME Summer School on Viscosity Solutions, Florence, Italy
- 04.1995: Plenary Lecture, Annual SIAM Meeting on Control, St. Louis, MO
- 07.1994: Main Speaker, Mechanics and Nonlinear Analysis, Rome, Italy
- 08.1992: Main Speaker, CRM Summer School, Montreal, Canada
- 01.1991: Lecture Series, Technion, Haifa, Israel.

PUBLICATIONS. An up to date list can be found in scholar google.

Books:

Controlled Markov Processes and Viscosity Solutions, 2nd edition, (with W.H. Fleming), Springer, (2005).
Stochastic Optimal Control in Finance, Cattedra Galileiana 2003, in Scuola Normale, Pisa.

Preprints:

115. Learning algorithms for mean field optimal control, (with Josef Teichmann and Qinxin Yan), arXiv:2503.17869, (2025).
114. Mean Field Games of Control and Cryptocurrency Mining, (with Nicolas Garcia and Ronnie Sircar), arXiv:2504.15526, (2025).
113. Controlled Occupied Processes and Viscosity Solutions, (with Valentin Tissot-Daguette and Jianfeng Zhang), arXiv:2411.12080, (2024).
112. Potential Mean-Field Games and Gradient Flows, (with Felix Höfer), arXiv:2408.00733, (2024).

Forthcoming:

111. Synchronization Games, (with Felix Höfer), *Mathematics of Operations Research.*
110. Stopping Times of Boundaries: Relaxation and Continuity, (with Valentin Tissot-Daguette), *SIAM Journal on Control and Opt.*

Published Articles:

2025:

109. Neural Optimal Stopping, (with Max Reppen and Valentin Tissot-Daguette), *Mathematical Finance*, 35(2), 441-469, (2025).

2024:

108. Deep level-set method for Stefan problems. (with Misha Shkolnikov and Valentin Tissot-Daguette), *Journal of Computational Physics*, 503:112828,(2024).
107. Viscosity Solutions of the Eikonal Equation on the Wasserstein Space, (with Qinxin Yan), *Applied Mathematics & Optimization,* 90(1), (2024).
106. Viscosity Solutions of McKean-Vlasov control on a torus, (with Qinxin Yan), *SIAM Journal on Control and Opt.*, 30;62(2):903-23,(2024).

2023:

105. Synchronization in a Kuramoto Mean Field Game, (with Rene Carmona and Quentin Cormier), *Communication in Partial Differential Equations,* 2;48(9):1214-44, (2023).
104. Deep Stochastic Optimization in Finance, (with Max Reppen and Valentin Tissot-Daguette), *Digital Finance*, 5/1, 91—111, (2023).
103. Deep Empirical Risk Minimization: looking into future, (with Max Reppen), *Mathematical Finance*, 33/1, 116—145, (2023).
102. Leveraged ETFs with Market Closure and Frictions, (with Min Dai, Steven Kou and Chen Yang), *Management Science,* 69/2, 895—911, (2023).

2021:

101. Discrete dividend payments in continuous time, (with Jussi Keppo and Max Reppen), arXiv:1805.05077v1, *Mathematics of Operations Research,* 46/3, 895-911, (2021).
100. Viability and arbitrage under Knightian uncertainty, (with Matteo Burzoni and Frank Riedel), arXiv:1707.03335v1, *Econometrica*, 89/3, 1207-1234, (2021).
99. Martingale Optimal Transport Duality, (with Patrick Cheridito, Matti Kiiski and David Proemel), *Mathematische Annalen*, 379 (3-4), 1685-1712, (2021).

2020:

98. Viscosity Solutions for controlled McKean-Vlasov jump-diffusions, (with Matteo Burzoni, Vincenzo Ignazio and Max Reppen), *SIAM Journal on Control and Opt.*, 58/3, 1676-1699, (2020).
97. Conditional Davis prices, (with Kasper Larsen and Gordan Zitkovic), *Finance & Stochastics,* 24/3, 565--599, (2020).

96. Optimal dividends policies with random profitability rate, (with Max Reppen and Jean-Charles Rochet), M*athematical Finance,* 30/1, 228-259, (2020).

2019:

95. Second order stochastic target problems with generalized market impact, (with Bruno Bouchard, Gregoire Loeper and Chao Zhou), *SIAM Journal on Control and Opt.*, 57(6), 4125-4149, (2019).

2018:

94. Constrained optimal transport, (with Ibrahim Ekren), arXiv:1610.02940v1, *Archive for Rational Mechanics*, 227/3, 929-965, (2018).

2017:

93. A primer on portfolio choice with small transaction costs, (with Johannes Muhle-Karbe and Max Reppen), arXiv:1612.01302v1, *Annual Review of Financial Economics*, 9, 301-331 (2017).

92. Optimal consumption and investment with fixed and proportional transaction costs, (with Albert Altarovici and Max Reppen), *SIAM Journal on Control and Opt.*, 55,1673–1710, (2017).

91. Convex duality with transaction costs, (with Yan Dolinsky), *Mathematics of Operations Research*, 42/2,448–471, (2017).

90. Trading with small impact, (with L. Moreau and J. Muhle-Karbe), *Mathematical Finance*, 27/2,350–400, (2017).

89. Hedging with temporary price impact, (with Peter Bank and Moritz Voss), *Mathematics and Financial Economics*, 11, 215–229,(2017).

2016:

88. Utility maximization in an illiquid market in continuous time, (with M. Vukelja), *Mathematical Methods in Operations Research*, 84/2, 285–321,(2016).

87. Hedging under an expected loss constraint with small transaction costs, (with B. Bouchard and L. Moreau), *SIAM Journal on Control and Opt.,* 7/1, 508–551,(2016).

86. Facelifting in utility maximization, (with K. Larsen and G. Zitkovic), *Finance and Stochastics,* 20/1, 99–121, (2016).

2015:

85. Martingale optimal transport in the Skorokhod space, (with Y. Dolinsky), *Stochastic Processes and their Applications,* 125, 3893–3931, (2015).

Erratum: Corrigendum to "Martingale optimal transport in the Skorokhod space, (2016).

84. Asymptotics with fixed transaction costs, (with A. Altarovici and J. Muhle-Karbe), *Finance and Stochastics*, 19 (2), 363–414, (2015).

83. Homogenization and asymptotics for small transaction costs - the multi-dimensional case, (with D. Possamaï and N. Touzi), Communications in PDEs, (2015).

2014:

82. Robust hedging with proportional transaction costs, (with Y. Dolinsky), *Finance and Stochastics*, 18(2), 327–347, (2014).

81. Approximating stochastic volatility by recombinant trees, (with E. Akyildirim and Y. Dolinsky), *Annals of Applied Probability*, 24/5, 2176–2205, (2014).

80. Optimal dividend policy with random interest rates, (with E. Akyildirim, I.E. Guney and J.C. Rochet), *Journal of Mathematical Economics*, 51, 93–101, (2014).

79. Martingale optimal transport and robust hedging in continuous time, (with Y. Dolinsky), *Probability Theory and Related Fields,* 160 (1–2), 391–427, (2014).

78. Hedging in an Illiquid Binomial Market, (with S. Gökay), *Nonlinear Analysis*, 16, 1–16, (2014).

2013:

77. Homogenization and asymptotics for small transaction costs, (with N. Touzi), *SIAM Journal on Control and Opt.*, 51/4, 2893–2921, (2013).

76. Resilient price impact of trading and the cost of illiquidity, (with A.F. Roch), *International Journal on Theoretical and Applied Finance*, 16/6, (2013).

75. Utility maximization in an illiquid market, (with M. Vukelja), *Stochastics* - special issue in memory of M. Taksar, 85/4, 692–706, (2013).
74. Dual Formulation of Second Order Target Problems, (with N. Touzi and J. Zhang), *Annals of Applied Probability*, 23/1, 308–347, (2013).
73. Vortex density models for superconductivity and superfluidity, (with S. Baldo, R.L. Jerrard, G. Orlandi), *Communications in Mathematical Physics*, 318/1, 131–171, (2013).
72. Duality and Convergence for Binomial Markets with Friction, (with Y. Dolinsky), *Finance and Stochastics*, 17 (3), 447–475, (2013).
2012:
71. Convergence of Ginzburg-Landau functionals in 3-d superconductivity, (with S. Baldo, R.L. Jerrard, G. Orlandi), *Archive for Rational Mechanics and Analysis*, 205/3, 699–752, (2012).
70. Liquidity in a Binomial market, (with S. Gökay), *Mathematical Finance*, 22/2, 250–276, (2012).
69. Large liquidity expansion for super-hedging costs, (with D. Possamaï and N. Touzi), *Asymptotic Analysis,* 79, Issue: 1-2, 45–64, (2012).
68. Superhedging and Dynamic Risk Measures under Volatility Uncertainty, (with M. Nutz), *SIAM Journal on Control and Opt.*, 50/4, 2065–2089, (2012).
67. Wellposedness of Second Order Backward SDEs, (with N. Touzi and J. Zhang), *Probability Theory and Related Fields*, 153, 149–190, (2012).
66. Weak Approximation of G-Expectations, (with Y. Dolinsky and M. Nutz), *Stochastic Processes and their Applications*, 122 (2), 664–675, (2012).
2011:
65. Martingale Representation Theorem for the G-expectation, (with N. Touzi and J. Zhang), Stochastic Processes and their Applications, 121 (2), 265–287, (2011).
64. Quasi-sure stochastic analysis through aggregation, (with N. Touzi and J. Zhang), Electronic Journal of Probability, (Article Number: 67), 16, 1844–1879, (2011).
2010:
63. Option hedging for small investors under liquidity costs, (with U. Çetin and N. Touzi), Finance and Stochastics, 14 (3), 317–341, (2010).
62. Optimal investment strategies with a reallocation constraint, (with F. Egriboyun), *Mathematical Methods of Operations Research*, 71(3), 551–585, (2010).
61. Merton problem with taxes: characterization, computation and approximation, (with I. Ben-Tahar and N. Touzi), *SIAM Journal on Control and Opt.*, 1, 366–395, (2010).
2009:
60. The dynamic programming equation for second order stochastic target problems, (with N. Touzi), *SIAM Journal on Control and Opt.,* Vol. 48, No. 4, 2344–2365, (2009).**2007:**
59. Stochastic representations for nonlinear parabolic PDEs, survey article, (2007).
58. The dynamic programming equation for the problem of optimal investment under capital gains taxes, (with I. Ben-Tahar and N. Touzi), *SIAM Journal on Control and Opt.*, 48(5), 1779–1801, (2007).
57. Second order backward stochastic differential equations and fully non-linear parabolic PDEs, (with P. Cheridito, N. Touzi, and N. Victoir), *Communications on Pure and Applied Mathematics*, 60(7), 1081–1110 (2007).
56. Hedging under Gamma constraints by optimal stopping and face-lifting, (with N. Touzi), *Mathematical Finance*, 17 (1): 59–79 (2007).
2005:
55. Small time path behavior of double stochastic integrals and applications to stochastic control, (with P. Cheridito and N. Touzi), *Annals of Applied Probability*, 15/4, 2472–2495, (2005).
54. The multi-dimensional super-replication problem under gamma constraints, (with P. Cheridito and N. Touzi), *Annales de l'Institute Henri Poincare Analyse Nonlineaire*, 22 (5): 633–666 (2005).

2004:
53. Stochastic Control for a Class of Random Evolution Models, (with M.-O. Hongler and L. Streit), *Applied Mathematics and Optimization*, 49: 113–121 (2004).
2003:
52. A stochastic representation for mean curvature type flows, (with N. Touzi), *Annals of Probability*, 31/3, 1145–1165, (2003).
2002:
51. Limiting behavior of the Ginzburg-Landau energy, (with R.L. Jerrard), *Journal of Functional Analysis*, 192, 524–561, (2002).
50. A stochastic representation for level set equations, (with N. Touzi), *Communications in PDEs*, 27(9&10), 2031–2053, (2002).
49. Dynamic programming for stochastic target problems and geometric flows, (with N. Touzi), *Journal of European Mathematical Society*, 4/3, 201–236, (2002).
48. The Jacobian and the Ginzburg-Landau energy, (with R.L. Jerrard), *Calculus of Variations*, 14, 151–191, (2002).
47. Stochastic target problems and dynamic programming, (with N. Touzi), *SIAM Journal on Control and Opt.*, 41, 404–424, (2002).
46. Function of higher bounded variations, (with R.L. Jerrard), *Indiana University Math. Journal*, 51/3, 645–677, (2002).
2000:
45. Super-replication under Gamma constraints, (with N. Touzi), *SIAM Journal on Control and Opt.*, 39(1), 73–96, (2000).
1999:
44. Rectifiability of the distributional Jacobian for a class of functions, (with R.L. Jerrard), *C.R. Acad. Sci. Paris, t. 329, Serie* I, 983–688, (1999).
43. Scaling limits and regularity for a class of Ginzburg-Landau systems, (with R.L. Jerrard), *Annales L'Institute Henry Poincare,* 16/4, 423–466, (1999).
1998:
42. Backward SDEs with constraints on the gains process, (with J. Cvitanic and I. Karatzas), *Annals of Probability, 26*, 1522–1551, (1998).
41. Dynamics of Ginzburg-Landau vortices, (with R.L Jerrard), *Archive for Rational Mechanics and Analysis*, 142, 185–206, (1998).
40. Regularity and convergence of crystalline motion, (with K. Ishii), *SIAM Journal on Control and Opt.,* 30, 19–37, (1998).
39. Optimal replication of contingent claims under portfolio constraints, (with M. Broadie and J. Cvitanic), *Review of Financial Studies*, 11, 59–79, (1998).
38. Option pricing with transaction costs and a nonlinear Black-Scholes equation, (with G. Barles), *Finance and Stochastics*, 2, 369–397, (1998).
1997:
37. A measure theoretic approach to higher co-dimension mean curvature flow, (with L. Ambrosio), dedicated to Ennion de Giorgi, A*nn. Scuola Normale*, 25, 27–49, (1997).
36. Ginzburg-Landau equation and motion by mean curvature, I: convergence, *Journal of Geometric Analysis*, 7, 437–475, (1997).
35. Ginzburg-Landau equation and motion by mean curvature, II: development of the interface, *Journal of Geometric Analysis,* 7, 476–491, (1997).
34. Hedging in incomplete markets with HARA utility (with D. Duffie, W. Fleming, and T. Zariphopoulou), *J. Economic Dynamics and Control*, 21, 753–782, (1997).

1996:
33. Level set approach to mean curvature flow in arbitrary codimension, (with L. Ambrosio), *Journal of Differential Geometry*, 43, 693–737, (1996).
32. Three-phase boundary motions under constant velocities. I: The vanishing surface tension limit,, (with F. Reitich), *SIAM Journal on Control and Opt.*, 126A, 837–865, (1996).
31. Heavy traffic convergence of a controlled, multi-class, queuing system, (with L.F. Martins and S.E. Shreve), *SIAM Journal on Control and Opt.*, 34/6, 2133–2171, (1996).
1995:
30. Convergence of the phase field equations to the Mullins-Sekerka problem with a kinetic undercooling, Arc. Rat. Mech. An., 131, 139–197, (1995).
29. There is no nontrivial hedging portfolio for option pricing with transaction costs,, (with S.E. Shreve and J. Cvitanic), *Annals of Applied Probability.*, 5/2, 327–355, (1995).
28. Anisotropic planar motion of an interface relaxed by the formation of infinitesimal wrinkles, (with M. Gurtin and P.E. Souganidis), *J. Differential Equations,* 119/1, 54–108, (1995).
1994:
27. Optimal investment and consumption with transaction costs, (with S.E. Shreve), *Annals of Applied Probability*, 14/3, 609–693, (1994).
1993:
26. Motion of a set by the curvature of its boundary, *J. Differential Equations*, 101, 313–372, (1993).
25. On the propagation of singularities of semi-convex functions, (with L. Ambrosio and P. Cannarsa), *An. Scuola Normali Pisa, Serie IV*, Vol. XX, 597–616, (1993).
24. A dynamic programming approach to nonlinear boundary control problems of parabolic type, (with P. Cannarsa and F. Gozzi), *J. Functional Analysis*, 117/1, 25–61, (1993).
23. Front propagation and phase field theory, (with G. Barles and P.E. Souganidis), *SIAM Journal on Control and Opt.* 2/31, special issue dedicated to W. Fleming, 439–469, (1993).
22. Singular perturbations in manufacturing, *SIAM Journal on Control and Opt.*, 31, 132–146, (1993).
21. Uniqueness and singularities of rotationally symmetric surfaces moving by mean curvatur, (with P.E. Souganidis), *Comm. in PDE*, 18, 859–894, (1993).
1992:
20. Phase transitions and generalized motion by mean curvature, (with L.C. Evans and P.E. Souganidis), *Comm. in Pure and Applied Math.*, 65, 1097–1123, (1992).
19. Turnpike Sets and Their Analysis in Stochastic Production Planning Problems, (with S.P. Sethi, Q. Zhang, and J. Jiang), *Mathematics of Operations Research*, 17, 4, 932–950, (1992).
18. Some remarks on the Stefan problem with surface structure, (with M.E. Gurtin), *Quarterly of Applied Math.*, 50, 291–303 (1992).
1991:
17. Optimal investment and consumption with two bonds and transaction costs, (with S.E. Shreve and G.-L. Xin), *Mathematical Finance*, 1/3, 53–84, (1991).
16. A boundary value problem for Hamilton-Jacobi equations in Hilbert spaces, (with P. Cannarsa and F. Gozzi), *Applied Mathematics and Optimization*, 24, 197–220, (1991).
15. A free boundary problem related to singular stochastic control: parabolic case, (with S.E. Shreve), Comm. PDE, 16, 373–424, (1991).
14. An asymptotic analysis of hierarchical control of manufacturing systems, (with J. Lehoczky, S. Sethi, and M. Taksar), *Mathematics of Operations Research,* 16/3, 596–608, (1991).
1990:
13. A viscosity solution approach to the asymptotic analysis of queueing systems, (with P. Dupuis and H. Ishii), *Annals of Probability,* 18/1, 226–255, (1990).

1989:

12. Asymptotic expansions for Markov processes with Levy generators, (with W. Fleming), *Applied Mathematics and Optimization*, 19, 203–223, (1989).

11. Generalized one-sided estimates for solutions of Hamilton-Jacobi equations and applications, (with P. Cannarsa), *Nonlinear Analysis, Theory, Methods*, 13/3, 305–323, (1989).

10. Regularity of the value function of a two-dimensional singular stochastic control problem, (with S.E. Shreve), *SIAM Journal on Control and Opt.*, 27/4, 876–907, (1989).

1988:

9. Mixing Markov chains and their images, (with M. Barnsley and M. Berger), *Probability in Eng. and Inf. Sci.*, 387–414, (1988).

8. Random walks generated by affine mappings, (with M. Berger), *J. Th. Prob.*, 1/3, 239–254, (1988).

7. On the Hamilton-Jacobi equations in Banach spaces, *J.O.T.A.*, 57/3, 429–437, (1988).

1987:

6. A remark on the large deviations of an ergodic Markov process, (with W. Fleming and S.-J. Sheu), *Stochastics*, 22, 187–199, (1987).

5. An optimal stochastic production planning problem with randomly fluctuating demand, (with W. Fleming and S. Sethi), S*IAM Journal on Control and Opt.* 25, 1494–1502, (1987).

4. On the singularities of the viscosity solutions to Hamilton-Jacobi equations, (with P. Cannarsa), *Indiana University Mathematics Journal*, 36/3, 501–524, (1987).

1986:

3. Optimal Control with state-space constraint II, *SIAM Journal on Control and Opt.*, 24/3, 1110–1122, (1986).

2. Optimal Control with state-space constraint I, S*IAM Journal on Control and Opt.*, 24/3, 552–562, (1986).

1985:

1. Optimal control of a one-dimensional storage process, *Applied Mathematics and Optimization*, 13, 175–191, (1985).