

Published Papers by Paul Tseng up to October 2007

Note: In the following, co-authors are listed in alphabetical order:

- 1) "Relaxation Methods for Network Flow Problems with Convex Arc Costs," *SIAM Journal on Control and Optimization*, with D. P. Bertsekas and P. Hosein, **25** (1987), 1219-1243.
- 2) "Relaxation Methods for Problems with Strictly Convex Separable Costs and Linear Constraints," with D. P. Bertsekas, *Mathematical Programming*, **38** (1987), 303-321.
- 3) "Relaxation Methods for Linear Programs," *Mathematics of Operations Research*, with D. P. Bertsekas, **12** (1987), 569-596.
- 4) "The RELAX Codes for Linear Minimum Cost Network Flow Problems," with D. P. Bertsekas, *Annals of Operations Research*, **13** (1988), 125-190.
- 5) "Relaxation Methods for Minimum Cost Ordinary and Generalized Network Flow Problems," with D. P. Bertsekas, *Operations Research*, **36** (1988), 93-114.
- 6) "A Simple Complexity Proof for a Polynomial-Time Linear Programming Algorithm," *Operations Research Letters*, **8** (1989), 155-159.
- 7) "Distributed Computation for Linear Programming Problems Satisfying a Certain Diagonal Dominance Condition," *Mathematics of Operations Research*, **15** (1990), 33-48.
- 8) "Relaxation Methods for Monotropic Programs," with D. P. Bertsekas, *Mathematical Programming*, **46** (1990), 127-151.
- 9) "Dual Ascent Methods for Problems with Strictly Convex Costs and Linear Constraints: A Unified Approach," *SIAM Journal on Control and Optimization*, **28** (1990), 214-242.
- 10) "Solving H-Horizon Stationary Markov Decision Problems in Time Proportional to Log(H)," *Operations Research Letters*, **9** (1990), 287-297.
- 11) "Partially Asynchronous, Parallel Algorithms for Network Flow and Other Problems," with D. P. Bertsekas and J. N. Tsitsiklis, *SIAM Journal on Control and Optimization*, **28** (1990), 678-710.
- 12) "Further Applications of a Splitting Algorithm to Decomposition in Variational Inequalities and Convex Programming," *Mathematical Programming*, **48** (1990), 249-263.
- 13) "Applications of a Splitting Algorithm to Decomposition in Convex Programming and Variational Inequalities," *SIAM Journal on Control and Optimization*, **29** (1991), 119-138.
- 14) "Optimal Communication Algorithms for Hypercubes," *Journal of Parallel and Distributed Computing*, with D. P. Bertsekas, C. Ozveren, G. D. Stamoulis, and J. N. Tsitsiklis, **11** (1991), 263-275.
- 15) "Decomposition Algorithm for Convex Differentiable Minimization," *Journal of Optimization Theory and Applications*, **70** (1991), 109-135.
- 16) "Relaxation Methods for Problems with Strictly Convex Costs and Linear Constraints," with D. P. Bertsekas, *Mathematics of Operations Research*, **16** (1991), 462-481.
- 17) "On the Convergence of a Matrix Splitting Algorithm for the Symmetric Monotone Linear Complementarity Problem," with Z.-Q. Luo, *SIAM Journal on Control and Optimization*, **29** (1991), 1037-1060.
- 18) "Descent Methods for Convex Essentially Smooth Minimization," *Journal of Optimization Theory and Applications*, **71** (1991), 425-463.
- 19) "On the Convergence of the Coordinate Descent Method for Convex Differentiable Minimization," with Z.-Q. Luo, *Journal of Optimization Theory and Applications*, **72** (1992), 7-35.
- 20) "A Decomposition Property for a Class of Square Matrices," with Z.-Q. Luo, *Applied Mathematics Letters*, **4** (1991), 67-69.
- 21) "Relaxation Method for Large Scale Linear Programming using Decomposition," *Mathematics of Operations Research*, **17** (1991), 859-880.
- 22) "Complexity Analysis of a Linear Complementarity Algorithm Based on a Lyapunov Function," *Mathematical Programming*, **53** (1992), 297-306.

- 23) “On the Rate of Convergence of a Partially Asynchronous Gradient Projection Algorithm,” *SIAM Journal on Optimization*, **1** (1991), 603–619.
- 24) “Error Bound and Convergence Analysis of Matrix Splitting Algorithms for the Affine Variational Inequality Problem,” with Z.-Q. Luo, *SIAM Journal on Optimization*, **2** (1992), 43–54.
- 25) “On the Convergence of the Affine-Scaling Algorithm,” with Z.-Q. Luo, *Mathematical Programming*, **56** (1992), 301–319.
- 26) “On the Linear Convergence of Descent Methods for Convex Essentially Smooth Minimization,” with Z.-Q. Luo, *SIAM Journal on Control and Optimization*, **30** (1992), 408–425.
- 27) “On the Convergence of the Products of Firmly Nonexpansive Mappings,” *SIAM Journal on Optimization*, **2** (1992), 425–434.
- 28) “On a Global Error Bound for a Class of Monotone Affine Variational Inequality Problems,” with Z.-Q. Luo, *Operations Research Letters*, **11** (1992), 159–165.
- 29) “Global Linear Convergence of a Path Following Algorithm for Some Variational Inequality Problems,” *Journal of Optimization Theory and Applications*, **75** (1992), 265–279.
- 30) “Dual Coordinate Ascent Methods for Non-Strictly Convex Minimization,” *Mathematical Programming*, **59** (1993), 231–247.
- 31) “Error Bound and Reduced Gradient Projection Algorithms for Convex Minimization over a Polyhedral Set,” with Z.-Q. Luo, *SIAM Journal on Optimization*, **3** (1993), 43–59.
- 32) “On the Convergence of the Exponential Multiplier Method for Convex Programming,” with D. P. Bertsekas, *Mathematical Programming*, **60** (1993), 1–19.
- 33) “On the Convergence Rate of Dual Ascent Methods for Linearly Constrained Convex Minimization,” with Z.-Q. Luo, *Mathematics of Operations Research*, **18** (1993), 846–867.
- 34) “A Path-Following Algorithm for Linear Programming using Quadratic and Logarithmic Penalty Functions,” *SIAM Journal on Control and Optimization*, **31** (1993), 1578–1598.
- 35) “Partial Proximal Minimization Algorithms for Convex Programming,” with D. P. Bertsekas, *SIAM Journal on Optimization*, **4** (1994), 551–572.
- 36) “Error Bounds and Convergence Analysis of Feasible Descent Methods: A General Approach,” with Z.-Q. Luo, *Annals of Operations Research*, **46** (1993), 157–178.
- 37) “Perturbation Analysis of a Condition Number for Linear Systems,” with Z.-Q. Luo, *SIAM Journal on Matrix Analysis*, **15** (1994), 636–660.
- 38) “On the Rate of Convergence of a Distributed Asynchronous Routing Algorithm,” with Z.-Q. Luo, *IEEE Transactions on Automatic Control*, **39** (1994), 1123–1129.
- 39) “Translational Cuts for Convex Minimization,” with J. V. Burke, A. A. Goldstein, and Y. Ye, *Complexity in Numerical Optimization* (Ed. P. M. Pardalos), World Scientific Press, 1993, pp. 57–73.
- 40) “A Unified Analysis of Hoffman’s Bound via Fenchel Duality,” with J. V. Burke, *SIAM Journal on Optimization*, **6** (1996), 265–282.
- 41) “Partial Affine-Scaling for Linearly Constrained Minimization,” *Mathematics of Operations Research*, **20** (1995), 678–694.
- 42) “Analysis of an Approximate Gradient Projection Method with Applications to the Back Propagation Algorithm,” with Z.-Q. Luo, *Optimization Methods and Software*, **44** (1994), 85–101.
- 43) “On Linear Convergence of Iterative Methods for the Variational Inequality Problem,” *Journal of Computational and Applied Mathematics*, **60** (1995), 237–252.
- 44) “On a Global Projection-Type Error Bound for the Linear Complementarity Problem,” with X.-D. Luo, *Linear Algebra and Its Applications*, **253** (1997), 251–278.
- 45) “Equivalence of Complementarity Problems to Differentiable Minimization: A Unified Approach,” with N. Yamashita and M. Fukushima, *SIAM Journal on Optimization*, **6** (1996), 446–460.

- 46) “Linearly Constrained Convex Programming as Unconstrained Differentiable Concave Programming,” *Journal of Optimization Theory and Applications*, **85** (1995), 489–494.
- 47) “Growth Behaviour of a Class of Merit Functions for the Nonlinear Complementarity Problem,” *Journal of Optimization Theory and Applications*, **89** (1996), 17–37.
- 48) “Simplified Analysis of An $O(nL)$ -Iteration Infeasible Predictor-Corrector Path Following Method for Monotone LCP,” in *Recent Trends in Optimization Theory and Applications*, R. P. Agarwal, ed., World Scientific, 1995, 423-434.
- 49) “On Computing the Nested Sums and Infimal Convolutions of Convex Piecewise-Linear Functions,” with Z.-Q. Luo, *Journal of Algorithms*, **21** (1996), 240-266.
- 50) “Modified Projection-Type Methods for Monotone Variational Inequalities,” with M. Solodov, *SIAM Journal on Control and Optimization*, **34** (1996), 1814-1830.
- 51) “Alternating Projection-Proximal Methods for Convex Programming and Variational Inequalities,” *SIAM Journal on Optimization*, **7** (1997), 951-965.
- 52) “An Infeasible Path-Following Method for Monotone Complementarity Problems,” *SIAM Journal on Optimization*, **7** (1997), 386–402.
- 53) “ ϵ -Relaxation Method for Separable Convex Cost Network Flow Problems,” with D. P. Bertsekas and L. C. Polymenakos, *SIAM Journal on Optimization*, **7** (1997), 853–870.
- 54) “A New Class of Merit Functions for the Nonlinear Complementarity Problem,” with Z.-Q. Luo, in *Complementarity and Variational Problems: State of the Art*, edited by M. C. Ferris and J.-S. Pang, SIAM Publications, Philadelphia, 1997, 204–225.
- 55) “ ϵ -Relaxation and Auction Methods for Separable Convex Cost Network Flow problems,” with D. P. Bertsekas and L. C. Polymenakos, *Proceedings of International Conference on Network Optimization*, edited by P. M. Pardalos, D. W. Hearn, and W. W. Hager, Springer-Verlag, Berlin, 1997, 103–126.
- 56) “Incremental Gradient(-Projection) Method with Momentum Term and Adaptive Stepsize Rule,” *SIAM Journal on Optimization*, **8**, 1998, 506–531.
- 57) “Search Directions and Convergence Analysis of Some Infeasible Path-following Methods for the Monotone Semi-Definite LCP”, *Optimization Methods and Software*, **9**, 1998, 245–268.
- 58) “Merit Functions for Semi-Definite Complementarity Problems”, *Mathematical Programming*, **83**, 1998, 159–185.
- 59) “Fortified-Descent Simplicial Search Method: A General Approach,” *SIAM Journal on Optimization*, **10**, 2000, 269–288.
- 60) “Convergence and Error Bound for Perturbation of Linear Programs,” *Computational Optimization and Applications*, **13**, Special issue dedicated to Olvi Mangasarian, 1999, 221–230.
- 61) “Analysis of a non-interior continuation method based on Chen-Mangasarian smoothing functions for complementarity problems,” in *Reformulation – Nonsmooth, Piecewise Smooth, Semismooth and Smoothing Methods* edited by M. Fukushima and L. Qi, Kluwer Academic Publishers, Boston, 1998, 381–404.
- 62) “Splitting Methods for LCP,” *Encyclopedia of Optimization*, edited by C. Floudas and P. Pardalos, accepted for publication in March 1998, 4 pages.
- 63) “An ϵ -Out-of-Kilter Method for Monotropic Programming Problems,” *Mathematics of Operations Research*, **26**, 2001, 221–233.
- 64) “A Modified Forward-Backward Splitting Method for Maximal Monotone Mappings,” *SIAM Journal on Control and Optimization*, **38**, 2000, 431–446.
- 65) “Error Bounds for Regularized Complementarity Problems,” in *Ill-posed Variational Problems and Regularization Techniques*, Lecture Notes in Economics and Mathematical Systems 477, edited by Michel Théra and Rainer Tichatschke, Springer-Verlag, Berlin, 1999, 247–274.
- 66) “Block Coordinate Relaxation Methods for Nonparametric Wavelet Denoising,” with Sylvain Sardy and Andrew Bruce, *Journal of Computational and Graphical Statistics*, **9**, 2000, 361–379.

- 67) “Error Bounds and Superlinear Convergence Analysis of Some Newton-Type Methods in Optimization,” in *Nonlinear Optimization and Related Topics*, edited by G. Di Pillo and F. Giannessi, Kluwer, 2000, 445–462.
- 68) “The LeChatelier Principle: the Long and the Short of It,” with Wing Suen and Eugene Silberberg, *Economic Theory*, **16**, 2000, 471–476.
- 69) “Some Methods Based on the D-Gap Function for Solving Monotone Variational Inequalities,” with Michael Solodov, *Computational Optimization and Applications*, **17**, 2000, 255–277.
- 70) “Nearest q -Flat to m Points,” *Journal of Optimization Theory and Applications*, **105**, 2000, 249–252.
- 71) “An ϵ -Relaxation Method for Generalized Separable Convex Cost Network Flow Problems,” with D. P. Bertsekas, *Mathematical Programming*, **88**, 2000, 85-104.
- 72) “Metric Regularity, Strong CHIP, and CHIP are Distinct Properties,” with Heinz Bauschke and Jonathan Borwein, *Journal of Convex Analysis*, **7**, 2000, 395-412.
- 73) “Co-NP-Completeness of Some Matrix Classification Problems,” *Mathematical Programming*, **88**, 2000, 183-192.
- 74) “Robust Wavelet Denoising,” with Sylvain Sardy and Andrew Bruce, *IEEE Transactions on Signal Processing*, **49**, 2001, 1146-1152.
- 75) “Convergence of Block Coordinate Descent Method for Nondifferentiable Minimization,” *Journal of Optimization Theory and Applications*, **109**, 2001, 473-492.
- 76) “Non-Interior Continuation Methods for Solving Semidefinite Complementarity Problems,” with Xin Chen, *Mathematical Programming*, **95**, 2003, 431-474.
- 77) “Analysis of an Asynchronous Space Decomposition Method for Convex Minimization,” with Xue-Cheng Tai, *Mathematics of Computation*, **71**, 2001, 1105-1135.
- 78) “Gilding the Lily: a Variant of the Nelder-Mead Algorithm,” with Larry Nazareth, *Computational Optimization and Applications*, **22**, 2002, 133-144.
- 79) “An Implementable Active-Set Algorithm for Computing a B-Stationary Point of the Mathematical Program with Linear Complementarity Constraints,” with Masao Fukushima, *SIAM Journal on Optimization*, **12**, 2002, 724-739.
- 80) “Smoothing Functions for Second-Order-Cone Complementarity Problems”, with Masao Fukushima and Zhi-Quan Luo, *SIAM Journal on Optimization*, **12**, 2002, 436-460.
- 81) “Objective-Derivative-Free Methods for Constrained Optimization,” with Stefano Lucidi and Marco Sciandrone, *Mathematical Programming*, **92**, 2002, 37-59.
- 82) “A Convergent Infeasible Interior-Point Trust-Region Method for Inequality Constrained Optimization,” *SIAM Journal on Optimization*, **13**, 2002, 432–469.
- 83) “On Some Interior-Point Algorithms for Nonconvex Quadratic Optimization,” with Yinyu Ye, *Mathematical Programming*, **93**, 2002, 217-225.
- 84) “Implementation and Testing of Auction Methods for Solving Separable Convex Cost Generalized Network Flow Problems,” with Francesca Guerriero, *Journal of Optimization Theory and Applications*, **115**, 2002, 113-144.
- 85) “Analysis of Nonsmooth Symmetric Matrix Functions with Applications to Semidefinite Complementarity Problems”, with Xin Chen and Houduo Qi, *SIAM Journal of Optimization*, **13**, 2003, 960-985.
- 86) “Convergence Properties of Dikin’s Affine Scaling Algorithm for Nonconvex Quadratic Minimization,” *Journal of Global Optimization*, **30**, 2004, 285-300.
- 87) “Almost Smooth Functions,” with Liqun Qi, in *Nonlinear Analysis and Convex Analysis 2001*, W. Takahashi and T. Tanaka, eds., World Scientific Publishing Co., London, 2002.
- 88) “Automatic Smoothing with Wavelets for a Wide Class of Distributions”, with Sylvain Sardy and Anestis Antoniadis, *Journal of Computational and Graphical Statistics*, **13**, 2004, 399-421.

- 89) “An Analysis of the EM Algorithm and Entropy-Like Proximal Point Methods”, *Mathematics of Operations Research*, **29**, 2004, 27–44.
- 90) “Further Results on Approximating Nonconvex Quadratic Optimization by Semidefinite Programming Relaxation”, *SIAM Journal on Optimization*, **14**, 2003, 268-283.
- 91) “A Sequential Quadratically Constrained Quadratic Programming Method for Differentiable Convex Minimization,” with Masao Fukushima and Zhi-Quan Luo, *SIAM Journal on Optimization*, **13**, 2003, 1098-1119.
- 92) “AMlet, RAMlet, and GAMlet: Automatic Nonlinear Fitting of Additive Models, Robust and Generalized, With Wavelets,” with Sylvain Sardy, *Journal of Computational and Graphical Statistics*, **13**, 2004, 283-309.
- 93) “Efficient Computation of Multiple Solutions in Quasibrittle Fracture Analysis,” with Francis Tin-Loi, *Computer Methods in Applied Mechanics and Engineering*, **192**, 2003, 1377-1388.
- 94) “On the Statistical Analysis of Smoothing by Maximizing Dirty Markov Random Field Posterior Distributions,” with Sylvain Sardy, *Journal of the American Statistical Association*, **99**, 2004, 191-204.
- 95) “Analysis of Nonsmooth Vector-Valued Functions Associated with Second-Order Cones,” with Xin Chen and Jein-Shan Chen, *Mathematical Programming, B*, **101**, 2004, 95-117.
- 96) “Existence of Global Minima for Constrained Optimization,” with Asuman Ozdaglar, *Journal of Optimization Theory and Applications*, **128**, No. 3, 2006, 523-546.
- 97) “Enhanced Fritz John Conditions for Convex Programming,” with Dimitri Bertsekas and Asuman Ozdaglar, *SIAM Journal on Optimization*, **16**, No. 3, 2006, 766-797.
- 98) “An Unconstrained Smooth Minimization Reformulation of the Second-Order Cone Complementarity Problem,” with Jein-Shan Chen, *Mathematical Programming*, **104**, 2005, 293-327.
- 99) “Set Intersection Theorems and Existence of Optimal Solutions,” with Dimitri Bertsekas, *Mathematical Programming*, **110**, 2007, 287-314.
- 100) “Elastic-Mode Algorithms for Mathematical Programs with Equilibrium Constraints: Global Convergence and Stationarity Properties,” with Mihai Anitescu and Stephen Wright, *Mathematical Programming*, **110**, 2007, 337-371.
- 101) “Some Convex Programs without Duality Gap,” to appear in *Mathematical Programming*, 25 pages.
- 102) “On Piecewise Smooth Functions and Almost Smooth Functions,” with Liqun Qi, *Nonlinear Analysis*, **67**, 2007, 773-794.
- 103) “Approximation Bounds for Quadratic Optimization with Homogeneous Quadratic Constraints,” with Zhi-Quan Luo, Nicholas D. Sidiropoulos, Shuzhong Zhang, *SIAM Journal on Optimization*, **18**, 2007, 1–28.
- 104) “Second-Order Cone Programming Relaxation of Sensor Network Localization,” *SIAM Journal on Optimization*, **18**, 2007, 156–185.
- 105) “Coordinate Gradient Descent Method for Nonsmooth Separable Minimization,” with S. Yun, to appear in *Mathematical Programming* in June 2006, 39 pages.
- 106) “Exact Regularization of Convex Programs,” with M. P. Friedlander, to appear in *SIAM Journal of Optimization*, 25 pages.
- 107) “A Coordinate Gradient Descent Method for Linearly Constrained Smooth Optimization and Support Vector Machine Training,” with S. Yun, to appear in *Computational Optimization and Applications*, 28 pages.