

PUBLICATION LIST: R. T. ROCKAFELLAR

February, 2004

200. "Moreau's proximal mappings and convexity in Hamilton-Jacobi theory," submitted.
199. "Portfolio analysis with general deviation measures," Research Report 2003-8, ISE Dept., Univ. Florida. (with S. Uryasev and M. Zabarankin).
198. "A variational inequality scheme for determining an economic equilibrium of classical or extended type," *Variational Analysis and Applications* (F. Giannessi and A. Maugeri, eds.), Kluwer, 2004 (with A. Jofre and R. J-B Wets).
197. "Hamilton-Jacobi theory and parametric analysis in fully convex problems of optimal control," *J. Global Optimization*, accepted.
196. "Deviation measures in generalized linear regression," Research Report 2002-?, ISE Dept., Univ. Florida. (with S. Uryasev and M. Zabarankin).
195. "Deviation measures in risk analysis and optimization," Research Report 2002-7, ISE Dept., Univ. Florida. (with S. Uryasev and M. Zabarankin).
194. "Regularity properties and conditioning in variational analysis and optimization," *Set-Valued Analysis*, accepted (with A. Dontchev).
193. "Some properties of piecewise smooth functions," *Computational Optim. and Appl.* **25** (2003), 247–250.
192. "Envelope representations in Hamilton-Jacobi theory for fully convex problems of control," *Proc. 40th IEEE Conf. on Decisions and Control* (Orlando, Florida), 2768–2771 (with P. R. Wolenski).
191. "Duality and dynamics in Hamilton-Jacobi theory for fully convex problems of control," *Proc. 40th IEEE Conf. on Decisions and Control* (Orlando, Florida), 2763–2767 (with P. R. Wolenski).
190. "Conditional value-at-risk for general loss distributions," *J. Banking and Finance* **26** (2002), 1443–1471.
189. "Variational geometry and equilibrium," accepted for inclusion in a book to be published by Kluwer (with M. Patriksson).
188. "Convex analysis in the calculus of variations," in *Advances in Convex Analysis and Global Optimization* (N. Hadjisavvas and P. M. Pardalos, eds.), Kluwer, 2001, 135–152.
187. "Sensitivity analysis of variational inequalities over aggregated polyhedra, with application to traffic equilibria," *Transportation Science*, accepted (with M. Patriksson).
186. "Generalized conjugacy in Hamilton-Jacobi theory for fully convex Lagrangians," *Convex Analysis* **9** (2002), 463–474 (with R. Goebel).
185. "A mathematical model and descent algorithm for bilevel traffic management," *Transportation Science* **36** (2002), 271–291 (with M. Patriksson).
184. "Graphical convergence of sums of monotone mappings," *Proc. Amer. Math. Soc.* **130** (2002), 2261–2269 (with T. Pennanen and M. Théra).
183. "The radius of metric regularity," *Trans. Amer. Math. Soc.* **355** (2002), 493–517 (with A. L. Dontchev and A. S. Lewis).
182. "Optimization of conditional value-at-risk," *Journal of Risk* **2** (2000), No. 3, 21–42 (with S. Uryasev).
181. "Primal-dual solution perturbations in convex optimization," *Set-Valued Analysis* **9** (2001), 49–65 (with A. L. Dontchev).
180. "Ample parameterization of variational inclusions," *SIAM J. Optim.* **12** (2002), 170–187 (with A. L. Dontchev).
179. "Second-order convex analysis," *J. of Nonlin. & Convex Analysis* **1** (1999), 1–16.
178. "Dynamic splitting: An algorithm for deterministic and stochastic multiperiod optimization" (with D. Salinger).
177. "Extended nonlinear programming," in *Nonlinear Optimization and Related Topics* (G. Di Pillo and F. Giannessi, eds.), Kluwer, 1999, 381–399.

176. “Stability of locally optimal solutions,” *SIAM J. Optim.* 10 (2000), 580–604 (with A. B. Levy and R. A. Poliquin).
- [175. **Network Flows and Monotropic Optimization**, same book as [101] but republished now in the series: *Optimization, Computation, and Control*, Athena Scientific, 1998.]
174. “Duality and optimality in multistage stochastic programming,” *Annals of Operations Research* 85 (1999), 1–19.
173. “Convexity in Hamilton-Jacobi theory 2: envelope representations,” *SIAM J. Control Opt.* 40 (2001), 1351–1372 (with P. R. Wolenski).
172. “Convexity in Hamilton-Jacobi theory 1: dynamics and duality,” *SIAM J. Control Opt.* 40 (2001), 1323–1350 (with P. R. Wolenski).
171. “Local differentiability of distance functions,” *Transactions Amer. Math. Soc.* 352 (2000), 5231–5241 (with R. A. Poliquin and L. Thibault).
170. **Variational Analysis**, *Grundlehren der Mathematischen Wissenschaften 317*, Springer-Verlag, 1997 (733 pp.) (with R. J-B Wets).
169. “Proto-derivatives of partial subgradient mappings,” *J. Convex Analysis* 4 (1997), 221–234 (with R. A. Poliquin).
168. “Tilt stability of a local minimum,” *SIAM J. Optim.* 8 (1998) 287–299 (with R. A. Poliquin).
167. “Characterizations of lipschitzian stability in nonlinear programming,” in *Mathematical Programming With Data Perturbations* (A. V. Fiacco, ed.), Marcel Dekker, New York, 1997, 65–82 (with A. Dontchev).
166. “A derivative-coderivative inclusion in second-order nonsmooth analysis,” *Set-Valued Analysis* 5 (1997), 1–17 (with D. Zagrodny).
165. “Bolza problems with general time constraints,” *SIAM J. Control Opt.* 35 (1997), 2050–2069 (with P.D. Loewen).
- [164. **Convex Analysis**, same book as [24] but republished now in paperback in a new series: *Princeton Landmarks in Mathematics and Physics*, Princeton University Press, Princeton NJ, 1997.]
163. “Proto-derivatives and the geometry of solution mappings in nonlinear programming,” in *Nonlinear Optimization and Applications* (G. Di Pillo and F. Giannessi, eds.), Plenum, New York, 1996, 249–260 (with A. Levy).
162. “Two-party arbitrage and market-consistent pricing of financial contracts with taxes,” *Review of Financial Studies*, submitted (with J. C. Dermody).
161. “Convergence rates in forward-backward splitting,” *SIAM J. Optim.* 7 (1997), 421–444 (with G. H.-G. Chen).
160. “Characterizations of strong regularity for variational inequalities over polyhedral convex sets,” *SIAM J. Optim.* 6 (1996), 1087–1105 (with A. L. Dontchev).
159. “Second-order nonsmooth analysis in nonlinear programming,” in *Recent Advances in Optimization* (D. Du, L. Qi and R. Womersley, eds.), World Scientific Publishers, 1995, 322–350 (with R. A. Poliquin).
158. “Sensitivity of solutions in nonlinear programming problems with nonunique multipliers,” in *Recent Advances in Optimization* (D. Du, L. Qi and R. Womersley, eds.), World Scientific Publishers, 1995, 215–223 (with A. B. Levy).
157. “Generalized Hessian properties of regularized nonsmooth functions,” *SIAM J. Optim.* 6 (1996), 1121–1137 (with R. A. Poliquin).
156. “Prox-regular functions in variational analysis,” *Trans. Amer. Math. Soc.* 348 (1996), 1805–1838.
155. “New necessary conditions for the generalized problem of Bolza,” *SIAM J. Control Opt.* 34 (1996), 1496–1511 (with P. D. Loewen).
154. “Equivalent subgradient versions of Hamiltonian and Euler-Lagrange equations in variational analysis,” *SIAM J. Control Opt.* 34 (1996), 1300–1315.
153. “Monotone relations and network equilibrium,” in *Variational Inequalities and Network Equilibrium Problems* (F. Giannessi and A. Maugeri, eds.), Plenum, London, 1994, 271–288.

152. “Nonsmooth optimization,” in *Mathematical Programming: The State of the Art 1994* (J. R. Birge and K. G. Murty, eds.), Univ. of Michigan Press, 1994, 248–258.
151. “The Euler and Weierstrass conditions for nonsmooth variational problems,” *Calculus of Variations & PDE* 4 (1996), 59–87 (with A. D. Ioffe).
150. “Variational conditions and the proto-differentiation of partial subgradient mappings,” *Nonlinear Anal. Th. Meth. Appl.* 26 (1996), 1951–1964 (with A. Levy).
149. “Sensitivity analysis of solutions to generalized equations,” *Trans. Amer. Math. Soc.* 345 (1994), 661–671 (with A. Levy).
148. “Basic issues in Lagrangian optimization,” in *Optimization in Planning and Operation of Electric Power Systems* (K. Frauendorfer, H. Glavitsch and R. Bacher, eds.), Physica-Verlag, Heidelberg, 1993, 3–30.
147. “Extended linear-quadratic programming,” *SIAG/OPT Views-and-News*, No. 1 (Fall, 1992), 3–6.
146. “Lagrange multipliers and optimality,” *SIAM Review* 35 (1993), 183–238.
145. “Proto-derivative formulas for basic subgradient mappings in mathematical programming,” *Set-Valued Analysis* 2 (1994), 275–290 (with R. A. Poliquin).
144. “Mathematics of debt instrument taxation,” *Financial Markets, Institutions and Instruments* 3 (1994), 1–87 (with J. C. Dermody).
143. “Subgradients and variational analysis,” *The Mathematics Student* 62 (1993), 113–131.
142. “Amenable functions in optimization,” in *Nonsmooth Optimization Methods and Applications* (F. Giannessi, ed.), Gordon and Breach, Philadelphia, 1992, 338–353 (with R.A. Poliquin).
141. “Dualization of subgradient conditions for optimality,” *Nonlin. Analysis Th. Meth. Appl.* 20 (1993), 627–646.
140. “A calculus of epi-derivatives applicable to optimization,” *Canadian J. Math.* 45 (1993), 879–896 (with R. A. Poliquin).
139. “Optimal control of unbounded differential inclusions,” *SIAM J. Control Opt.* 32 (1994), 442–470 (with P. D. Loewen).
138. “Tax basis and nonlinearity in cash stream valuation,” *Math. Finance* 5 (1995), 97–119 (with J. C. Dermody).
137. “Cosmic convergence,” in *Optimization and Nonlinear Analysis* (A. Ioffe et al., eds.), Pitman Research Notes in Math. Series No. 244, Wiley, 1992, 249–272 (with R. J-B Wets).
136. “A characterization of epi-convergence in terms of convergence of level sets,” *Proceedings Amer. Math. Soc.* 116 (1992), 753–761 (with G. Beer and R. J-B Wets).
135. “On a special class of convex functions,” *J. Optim. Theory Appl.* 70 (1991), 91.
134. “A dual strategy for the implementation of the aggregation principle in decision making under uncertainty,” *J. Applied Stochastic Models and Data Analysis* 8 (1992), 245–255 (with R. J-B Wets).
133. “Primal-dual projected gradient algorithms for extended linear-quadratic programming,” *SIAM J. Optimization* 3 (1993), 751–783 (with C.-Y. Zhu).
132. “Asymptotic theory for solutions in generalized M -estimation and stochastic programming,” *Math. of Operations Research* 18 (1993), 148–162 (with A. J. King).
131. “Cash stream valuation in the face of transaction costs and taxes,” *Math. Finance* 1 (1991) (with J. C. Dermody), 31–54.
130. “Large-scale extended linear-quadratic programming and multistage optimization,” in *Advances in Numerical Partial Differential Equations and Optimization* (S. Gomez, J.-P. Hennart, R. Tapia, eds.), SIAM Publications, 1991, 247–261.
129. “The adjoint arc in nonsmooth optimization,” *Trans. Amer. Math. Soc.* 325 (1991), 39–72 (with P. D. Loewen).
128. “Nonsmooth analysis and parametric optimization,” in *Methods of Nonconvex Analysis* (A. Cellina, ed.), Springer-Verlag Lecture Notes in Math. No. 1446 (1990), 137–151.

127. "Sensitivity analysis for nonsmooth generalized equations," *Math. Programming* 55 (1992), 193–212 (with A. J. King).
126. "Hamiltonian trajectories and duality in the optimal control of linear systems with convex costs," *SIAM J. Control Opt.* 27 (1989), 1007–1025.
125. "Perturbation of generalized Kuhn-Tucker points in finite-dimensional optimization," in *Nonsmooth Optimization and Related Topics*, F. H. Clarke et al. (eds.), Plenum Press, 1989, 393–402.
124. "Computational schemes for large-scale problems in extended linear-quadratic programming," *Math. Programming* 48 (1990), 447–474.
123. "An internal variable theory of elastoplasticity based on the maximum plastic work inequality," *Quart. Appl. Math.* 47 (1990), 59–83 (with R. A. Eve and B. D. Reddy).
122. "Generalized second derivatives of convex functions and saddle functions," *Trans. Amer. Math. Soc.* 322 (1990), 51–77.
121. "A simplex-active-set algorithm for piecewise quadratic programming" in *Advances in Optimization and Approximation* (D.-Z. Du and J. Sun, eds.), Kluwer, 1994, 275–292.
120. "Proto-differentiability of set-valued mappings and its applications in optimization," in *Analyse Non Linéaire*, H. Attouch et al. (eds.), Gauthier-Villars, Paris, 1989, 449–482.
119. "Scenarios and policy aggregation in optimization under uncertainty," *Math. of Oper. Res.* 16 (1991), 119–147 (with R. J-B Wets).
118. "On the essential boundedness of solutions to problems in piecewise linear-quadratic optimal control," in *Analyse Mathématique et Applications*, F. Murat and O. Pironneau (eds.), Gauthier-Villars, Paris, 1988, 437–444.
117. "Multistage convex programming and discrete-time optimal control," *Control and Cybernetics* 17 (1988), 225–246.
116. "Generalized linear-quadratic problems of deterministic and stochastic optimal control in discrete time," *SIAM J. Control Opt.* 28 (1990), 810–822 (with R. J-B Wets).
115. "Second-order optimality conditions in nonlinear programming obtained by way of epi-derivatives," *Math. of Op. Res.* 14 (1989), 462–484.
114. "First and second-order epi-differentiability in nonlinear programming," *Trans. Amer. Math. Soc.* 307 (1988), 75–108.
113. "A generalized approach to linear-quadratic programming," *Proceedings Internat'l Conf. on Numerical Optimization and Appl.* (Xi'an, China, 1986), 58–63.
112. "Linear-quadratic programming and optimal control," *SIAM J. Control and Opt.* 25 (1987), 781–814.
111. "Lake eutrophication management: the Lake Balaton project," in *Numerical Techniques for Stochastic Optimization Problems*, Y. Ermoliev and R. J-B Wets (eds.), Springer-Verlag, 1987, 435–448 (with A. King, L. Somlyódy, R. J-B Wets).
110. "A note about projections in the implementation of stochastic quasi-gradient methods," in *Numerical Techniques for Stochastic Optimization Problems*, Y. Ermoliev and R. J-B Wets (eds.), Springer-Verlag, 1987, 385–392 (with R. J-B Wets).
109. "Linear-quadratic problems with stochastic penalties: the finite generation algorithm," in *Stochastic Optimization*, V. I. Arkin, A. Shirayev and R. J-B Wets (eds.), Springer-Verlag Lecture Notes in Control and Information Sciences No. 81, 1987 (with R. J-B Wets), 545–560.
108. "Optimization: A case for the development of new mathematical concepts," *J. Computational and Appl. Math.* 22 (1988), 243–255.
107. "A Lagrangian finite generation technique for solving linear-quadratic problems in stochastic programming," *Math. Programming Studies* 28 (1986), 63–93 (with R. J-B Wets).
106. "Lipschitzian properties of multifunctions," *Nonlin. Analysis Th. Meth. Appl.* 9 (1985), 867–885.
105. "Lipschitzian stability in optimization: the role of nonsmooth analysis," in *Nondifferentiable Optimization: Motivations and Applications*, V. Demyanov and D. Pallatschke (eds.), Springer-Verlag Lecture Notes in Economics and Math. Systems No. 255, 1985, 55–73.

104. “Monotropic programming: a generalization of linear programming and network programming,” in *Convexity and Duality in Optimization*, J. Ponstein (ed.), Springer-Verlag Lecture Notes in Economics and Math. Systems, No. 256, 1985, 10–36.
103. “Maximal monotone relations and the second derivatives of nonsmooth functions,” *Ann. Inst. H. Poincaré Analyse Non Linéaire* 2 (1985), 167–184.
102. “Extensions of subgradient calculus with applications to optimization,” *Nonlin. Analysis: Th. Meth. Appl.* 9 (1985), 665–698.
101. **Network Flows and Monotropic Optimization**, Wiley-Interscience, 1984 (610 pp.).
100. “Variational systems: an introduction,” in *Multifunctions and Integrands*, G. Salinetti (ed.), Springer-Verlag Lecture Notes in Math. No. 1091, 1984, 1–54 (with R. J-B Wets).
99. “Automatic step sizes for the descent algorithms in monotropic programming,” in *Mathematical Programming*, R.W. Cottle et al. (eds.), Elsevier (North-Holland), 1984, 337–346.
98. “Directional differentiability of the optimal value function in a nonlinear programming problem,” *Math. Programming Studies* 21 (1984), 213–226.
97. “Differentiability properties of the minimum value in an optimization problem depending on parameters,” *Proceedings of the International Congress of Mathematicians*, Warsaw, 1983, 1419–1423.
96. “A dual solution procedure for quadratic stochastic programming problems with simple recourse,” in *Numerical Methods*, V. Pereyra and A. Reinoza (eds.), Springer-Verlag Lecture Notes in Math., No. 1005, 1983, 252–265 (with R. J-B Wets).
95. “Generalized subgradients in mathematical programming,” in *Math. Programming Bonn 1982 — The State of the Art*, A. Bachem, M. Groetschel and B. Korte (eds.), Springer-Verlag, 1983, 368–380.
94. “Marginal values and second-order conditions for optimality,” *Math. Programming* 26 (1983), 245–286.
93. “Deterministic and stochastic optimization problems of Bolza type in discrete time,” *Stochastics* 10 (1983), 273–312 (with R. J-B Wets).
92. “On the interchange of subdifferentiation and conditional expectation for convex functionals,” *Stochastics* 7 (1982), 172–182 (with R. J-B Wets).
91. “Favorable classes of Lipschitz continuous functions in subgradient optimization,” in *Progress in Non-differentiable Optimization*, E. Nurminski (ed.), IIASA Collaborative Proceedings Series, International Institute of Applied Systems Analysis, Laxenburg, Austria, 1982, 125–144.
90. “Lagrange multipliers and subderivatives of optimal value functions in nonlinear programming,” *Math. Programming Study* 17 (1982), 28–66.
89. “Generalized subgradients in nonconvex programming,” in *Math. Methods in Operations Research*, A. Dontchev (ed.), Sofia, 1981, 103–110.
88. “Optimality conditions for convex control problems with nonnegative states and the possibility of jumps,” in *Game Theory and Math. Economics*, O. Moeschlin (ed.), North-Holland, 1981, 339–349.
87. “Monotropic programming: descent algorithms and duality,” in *Nonlinear Programming 4*, O.L. Mangasarian (ed.), Academic Press, 1981, 327–366.
86. “Proximal subgradients, marginal values, and augmented Lagrangians in nonconvex optimization,” *Math. of Op. Res.* 6 (1981), 427–437.
85. “Almost sure existence of Lagrangian price vectors in nonlinear programming,” in *Math. Programming and its Applications*, C. Castellani and P. Mazzolini (eds.), Angeli, Milan, 1981, 255–262.
84. **The Theory of Subgradients and its Applications to Problems of Optimization: Convex and Nonconvex Functions**, Helderman-Verlag, Berlin, 1981 (107 pp.). English version of [81].
83. “Generalized directional derivatives and subgradients of nonconvex functions,” *Canadian J. Math.* 32 (1980), 157–180.
82. “Lagrange multipliers and variational inequalities,” in *Variational Inequalities and Complementarity Problems*, R. W. Cottle, F. Giannessi and J.L. Lions (eds.), Wiley, 1980, 303–322.

81. **La Théorie des Sous-Gradients et Ses Applications à l'Optimisation: Fonctions Convexes et Non Convexes**, Collection Chaire Aisenstadt, Presses de l'Université de Montréal, 1979 (130 pp.).
80. "The generic nature of optimality conditions in nonlinear programming," *Math. of Oper. Res.* 4 (1979), 425–430.
79. "Directionally Lipschitzian functions and subdifferential calculus," *Proc. London Math. Soc.* 39 (1979), 331–355.
78. "Convex processes and Hamiltonian dynamical systems," in *Convex Analysis and Math. Economics*, J. Kreins (ed.), Springer-Verlag Lecture Notes in Math. Econ. No. 168, 1979, 122–136.
77. "Clarke's tangent cones and the boundaries of closed sets in R^n ," *Nonlin. Analysis: Th. Meth. Appl.* 3 (1979), 145–154.
76. "Duality in optimal control," in *Mathematical Control Theory*, W. A. Coppel (ed.), Springer-Verlag Lecture Notes in Math. No. 680, 1978, 219–257.
75. "Monotone operators and augmented Lagrangian methods in nonlinear programming," in *Nonlinear Programming 3*, O. L. Mangasarian et al. (eds.), Academic Press, 1978, 1–25.
74. "Higher derivatives of conjugate convex functions," *Int. J. Applied Analysis* 1 (1977), 41–43.
73. "The optimal recourse problem in discrete time: \mathcal{L}^∞ -multipliers for inequality constraints," *SIAM J. Control* 16 (1978), 16–36.
72. "Integral functionals, normal integrands and measurable selections," in *Nonlinear Operators and the Calculus of Variations*, L. Waelbroeck (ed.), Lecture notes in Math. No. 543, Springer-Verlag, 1976, 157–207.
71. "Dual problems of Lagrange for arcs of bounded variation," in *Calculus of Variations and Control Theory*, D. L. Russell (ed.), Academic Press, 1976, 155–192.
70. "Augmented Lagrangians and applications of the proximal point algorithm in convex programming," *Math. of Oper. Res.* 1 (1976), 97–116.
69. "Measures as Lagrange multipliers in multistage stochastic programming," *J. Math. Analysis Appl.* 60 (1977), 301–313.
68. "A growth property in concave-convex Hamiltonian systems," *J. Econ. Theory* 12 (1976), 191–196.
67. "Nonanticipativity and \mathcal{L}^∞ -martingales in stochastic optimization problems," in *Stochastic Systems: Modeling, Identification, and Optimization*, Math. Programming Study 6 (1976), 170–187.
66. "Lagrange multipliers in optimization," *SIAM-AMS Proceedings*, Vol. 9, R. W. Cottle and C. E. Lemke (eds.), 1976, 145–168.
65. "Monotone operators and the proximal point algorithm," *SIAM J. Control Opt.* 14 (1976), 877–898.
64. "Stochastic convex programming: relatively complete recourse and induced feasibility," *SIAM J. Control Opt.* 14 (1976) 547–589.
63. "Semigroups of convex bifunctions generated by Lagrange problems in the calculus of variations," *Math. Scandinavica* 36 (1975), 137–158.
62. "Saddle points of Hamiltonian systems in convex Lagrange problems having a nonzero discount rate," *J. Econ. Theory* 12 (1976), 71–113.
61. "Stochastic convex programming: Kuhn-Tucker conditions," *J. Math. Econ.* 2 (1975), 349–370 (with R. J-B Wets).
60. "On the equivalence of multistage recourse models in stochastic optimization," in *Control Theory, Numerical Methods and Computer Systems Modelling*, Lecture Notes in Econ. and Math. Systems No. 107, Springer-Verlag, 1974, 314–321.
59. "Solving a nonlinear programming problem by way of a dual problem," *Symposia Mathematica* 19 (1976), 135–160.
58. "Lagrange multipliers for an N -stage model in stochastic convex programming," in *Analyse Convexe et Ses Applications*, J.-P. Aubin (ed.), Springer-Verlag, 1974, 180–187.

57. "Stochastic convex programming: singular multipliers and extended duality," *Pacific J. Math.* 62 (1976), 173–195 (with R. J-B Wets).
56. "Existence theorems for general control problems of Bolza and Lagrange," *Advances in Math.* 15 (1975), 315–333.
55. "Stochastic convex programming: basic duality, Φ " *Pacific J. Math.* 62 (1976), 507–522.
54. "Continuous versus measurable recourse in N -stage stochastic programming," *J. Math. Analysis Appl.* 48 (1974), 836–859.
53. **Conjugate Duality and Optimization**, No. 16 in Conference Board of Math. Sciences Series, SIAM Publications, 1974 (79 pp.).
52. "Penalty methods and augmented Lagrangians in nonlinear programming," in *Fifth Conference on Optimization Techniques*, R. Conti and A. Ruberti (eds.), Springer-Verlag, 1973, 518–525.
51. "Augmented Lagrange multiplier functions and duality in nonconvex programming," *SIAM J. Control* 12 (1974), 268–285.
50. "The multiplier method of Hestenes and Powell applied to convex programming," *J. Opt. Theory Appl.* 12 (1973), 555–562.
49. "A dual approach to solving nonlinear programming problems by unconstrained optimization," *Math. Programming* 5 (1973), 354–373.
48. "Convex algebra and duality in dynamic models of production," in *Mathematical Models of Economics*, J. Loś (ed.), North-Holland, 1973, 351–378.
47. "Bibliographical supplement to convex analysis," 193 additional items with comments (22 pp.), updating the original bibliography of [24], published in the Russian edition of the book; Mir, 1973.
46. "Dual problems of optimal control," in *Techniques of Optimization*, A. V. Balakrishnan (ed.), Academic Press, 1972, 423–431.
45. "Saddle points of Hamiltonian systems in convex problems of Lagrange," *J. Opt. Theory Appl.* 12 (1973), 367–390.
44. "Optimal arcs and the minimum value function in problems of Lagrange," *Trans. Amer. Math. Soc.* 180 (1973), 53–83.
43. "State constraints in convex problems of Bolza," *SIAM J. Control* 10 (1972), 691–715.
42. "Convex integral functionals and duality," in *Contributions to Nonlinear Functional Analysis*, E. Zarattonello (ed.), Academic Press, 1971, 215–236.
41. "New applications of duality in nonlinear programming," in *Proceedings of the Fourth Conference on Probability Theory* (Braşov, Romania, 1971), Editura Academmi R.S.R., 1973, 73–81.
40. "Weak compactness of level sets of integral functionals," *Troisième Colloque d'Analyse Fonctionnelle* (CBRM, Liège, Belgium, 1970), H. G. Garnir (ed.), 1971, 85–98.
39. "Saddle points and convex analysis," in *Differential Games and Related Topics*, H.W. Kuhn and G.P. Szegő (eds.), North-Holland, 1971, 109–128.
38. "Some convex programs whose duals are linearly constrained," *Nonlinear Programming*, J. B. Rosen and O. L. Mangasarian (eds.), Academic Press, 1970, 293–322.
37. "Existence and duality theorems for convex problems of Bolza," *Trans. Amer. Math. Soc.* 159 (1971), 1–40.
36. "Ordinary convex programs without a duality gap," *J. Opt. Theory Appl.* 7 (1971), 143–148.
35. "Integrals which are convex functional, II," *Pacific J. Math.* 39 (1971), 439–469.
34. "Generalized Hamiltonian equations for convex problems of Lagrange," *Pacific J. Math.* 33 (1970), 411–428.
33. "Conjugate convex functions in optimal control and the calculus of variations," *J. Math. Analysis Appl.* 32 (1970), 174–222.
32. "Measurable dependence of convex sets and functions on parameters," *J. Math. Analysis Appl.* 28 (1969), 4–25.

31. "Convex functions, monotone operators and variational inequalities," in *Theory and Applications of Monotone Operators*, A. Ghizzetti (ed.), Tipografia Oderisi Editrice, Gubbio, Italy, 1969, 34–65.
30. "On the maximal monotonicity of subdifferential mappings," *Pacific J. Math.* 33 (1970), 209–216.
29. "On the maximality of sums of nonlinear monotone operators," *Trans. Amer. Math. Soc.* 149 (1970), 75–88.
28. "Local boundedness of nonlinear monotone operators," *Michigan Math. J.* 16 (1969), 397–407.
27. "Monotone operators associated with saddle-functions and minimax problems," in *Nonlinear Functional Analysis, Part I*, F. E. Browder (ed.), Proceedings of Symposia in Pure Math. 18, Amer. Math. Soc., 1970, 241–250.
26. "On the virtual convexity of the domain and range of a nonlinear maximal monotone operator," *Math. Annalen* 185 (1970), 81–90.
25. "Convexity properties of nonlinear maximal monotone operators," *Bull. Amer. Math. Soc.* 75 (1969), 74–77.
24. **Convex Analysis**, Vol. 28 of Princeton Math. Series, Princeton Univ. Press, 1970 (470 pp.).
23. "Convex functions and duality in optimization problems and dynamics," in *Mathematical Systems Theory and Economics I*, H. W. Kuhn and G. P. Szegö (eds.), Springer-Verlag, 1969, 117–141.
22. "Conjugate convex functions in nonlinear programming," in *Proceedings of the Sixth International Symposium on Math. Programming*, H. W. Kuhn and A. W. Tucker (eds.), Dept. of Math., Princeton University, 1970, 418–485.
21. "Duality in nonlinear programming," in *Mathematics of the Decision Sciences, Part 1*, G. B. Dantzig and A. F. Veinott (eds.), Lectures in Applied Math., Vol. II, Amer. Math. Soc., 1968, 401–422.
20. "Gradients of convex functions," *Transactions Amer. Math. Soc.* 139 (1969), 443–467 (with E. Asplund).
19. "The elementary vectors of a subspace of R^n ," in *Combinatorial Mathematics and its Applications*, R. C. Bose and T. A. Dowling (eds.), Univ. of North Carolina Press, 1969, 104–127.
18. "A model of cell cleavage, *Biophysical J.* 7 (1967), 659–673 (with J. Prothero).
17. "Convex functions on convex polytopes," *Proc. Amer. Math. Soc.* 19 (1968), 867–873 (with D. Gale and V.L. Klee).
16. "Integrals which are convex functionals," *Pacific J. Math.* 24 (1968), 525–540.
15. "Convex programming and systems of elementary monotonic relations," *J. Math. Analysis Appl.* 19 (1967), 167–187.
14. "A monotone convex analog of linear algebra," in *Proc. Colloquium on Convexity, Copenhagen, 1965*, W. Fenchel (ed.), Matematisk Institut, Copenhagen, 1967, 261–276.
13. "Conjugates and Legendre transforms of convex functions," *Canad. J. Math.* 19 (1967), 200–205.
12. "A general correspondence between dual minimax problems and convex programs," *Pacific J. Math.* 25 (1968), 597–611.
11. "Duality and stability in extremum problems involving convex functions," *Pacific J. Math.* 21 (1967), 167–187.
10. **Monotone Processes of Convex and Concave Type**, Memoir 77, Amer. Math. Soc., 1967.
 9. "Characterization of the subdifferentials of convex functions," *Pacific J. Math.* 17 (1966), 497–510.
 8. "Minimax theorems and conjugate saddle-functions," *Math. Scandinavica* 14 (1964), 151–173.
 7. "Extension of Fenchel's duality theorem for convex functions," *Duke Math. J.* 33 (1966), 81–90.
 6. "On the subdifferentiability of convex functions," *Proc. Amer. Math. Soc.* 16 (1965), 605–611 (with A. Brøndsted).
 5. "Level sets and continuity of conjugate convex functions," *Trans. Amer. Math. Soc.* 123 (1966), 46–63.
 4. "Helly's theorem and minima of convex functions," *Duke Math. J.* 32 (1965), 381–398.
 3. "A necessary condition for the existence of best approximations," *J. Math. Mech.* 13 (1964), 1037–1038 (with B. Kripke).

2. "A combinatorial algorithm for linear programs in the general mixed form," SIAM J. 12 (1964), 215–225.
1. "Duality theorems for convex functions," Bull. Amer. Math. Soc. 70 (1964), 189–192.
0. **Convex Functions and Dual Extremum Problems**, doctoral dissertation, Dept. of Mathematics, Harvard University, 1963 (175 pp.).