Curriculum vitae ed elenco delle pubblicazioni di Matteo Rocca

INFORMAZIONI PERSONALI

Matteo Rocca, nato a Lamezia Terme (CZ) il 19-9-1969, si e' laureato con Lode nel 1993 in Discipline Economiche e Sociali presso l'Università Bocconi di Milano.
Ha successivamente frequentato il dottorato di ricerca in "Metodi quantitativi per le decisioni economiche e finanziarie" presso l'Università di Trieste.

POSIZIONI ACCADEMICHE

2006- **Professore Ordinario**

Università degli Studi dell'Insubria

Dipartimento di Economia
Area 13/D4: METODI MATEMATICI DELL'ECONOMIA E DELLE SCIENZE ATTUARIALI E FINANZIARIE

2001-2006 **Professore Associato**

Università degli Studi dell'Insubria

Dipartimento di Economia
Area 13/D4: METODI MATEMATICI DELL'ECONOMIA E DELLE SCIENZE ATTUARIALI E FINANZIARIE

1996-2001 **Ricercatore**

Università degli Studi di Pavia e Università degli Studi dell'Insubria

Dipartimento di Economia
Area 13/D4: METODI MATEMATICI DELL'ECONOMIA E DELLE SCIENZE ATTUARIALI E FINANZIARIE

ATTIVITA' DIDATTICA

Ha insegnato nei corsi di Matematica Generale, Matematica per l'Economia e la Finanza, Ricerca Operativa e Basic Mathematics all'interno dei Corsi di Laurea Triennale e Magistrale attivati presso il Dipartimento di Economia dell'Università degli Studi dell'Insubria.

Insegna Multiobjective Optimization all'interno del Corso di Dottorato di Ricerca in

"Methods and Models for Economic Decisions" attivato presso il Dipartimento di Economia.

Insegna Matematica Generale e Matematica Applicata presso l'Università Bocconi di Milano.

Ha insegnato presso l'Università Cattaneo di Castellanza (LIUC) e l'Università degli Studi di Milano.

ATTIVITA' SCIENTIFICA

La sua attività scientifica si e' concentrata in larga parte su vari settori della Teoria dell'Ottimizzazione e della Convessità, legati alle applicazioni Economiche. In particolare si e' occupato di:

- Ottimizzazione Nonsmooth nel caso scalare, vettoriale e set-valued;
- Disequazioni Variazionali, problemi di Equlibrio vettoriali e set-valued e loro applicazioni economiche;
- Buona posizione per problemi di ottimo vettoriale e set-valued;
- Ottimizzazione Robusta vettoriale;
- Studio del comportamento di una funzione a valori vettoriali in un intorno dei propri punti critici attraverso un indice di Morse;
- Caratterizzazioni di funzioni convesse generalizzate nel caso vettoriale;
- Nozioni di equilibrio robusto nella Teoria dei Giochi e loro impatto sui giochi dinamici.

I progetti di ricerca in corso riguardano:

- applicazioni dell'Analisi Set-valued alla Finanza (progetto con la Libera Università di Bolzano) ;
- Gochi Multiobiettivo (progetto con la Shimane University di Matsue (Japan)).

E' autore di oltre 70 pubblicazioni su riviste internazionali, (anche con contributi su invito), quali ad esempio Mathematical Programming, Nonlinear Analysis-TMA, Journal of Optimization Theory and Applications, Journal of Global Optimization, Journal of Mathematical Analysis and Applications, Optimization, Journal of Convex Analysis, Mathematical Methods of Operations Research, Optimization Methods and Software, Annals of Operations Research, Set Valued and Variational Analysis, Decisions in Economics and Finance, Journal of Industrial and Management Optimization, Operations Research Perspectives.

Tra i suoi lavori principali si segnalano:

- Second-order conditions in C1, 1 constrained vector optimization, Ivan Ginchev, Angelo Guerraggio, Matteo Rocca, Mathematical Programming, vol. 104, no. 2-3, pp. 389-405, 2005

- Well-Posedness and Scalarization in Vector Optimization, Enrico Miglierina, Elena Molho, Matteo Rocca, Journal of Optimization Theory and Applications, vol. 126, no. 2, pp. 391-409, 2005
- From Scalar to Vector Optimization, Ivan Ginchev, Angelo Guerraggio, Matteo Rocca, Applications of Mathematics, vol. 51, no. 1, pp. -36, 2006
- Scalar characterizations of weakly cone-convex and weakly cone-quasiconvex functions, Davide La Torre, Nicolae Popovici, Matteo Rocca, Nonlinear Analysis, vol. 72, no. 3-4, 1909-1915, 2010
- Equilibrium in a vector supply-demand network with capacity constraints, Dihn The Luc, Melania Papalia, Matteo Rocca, Applied Analysis, vol. 90, no. 6, 1029-1045, 2011
- A characterization of cone-convexity for set-valued functions by cone-quasiconvexity, Daishi Kuroiwa; Nicolae Popovici; Matteo Rocca, *Set-Valued and Variational Analysis* Vol. , no. 2, 295–304., 2015
- Quasiconvexity of set-valued maps assures well-posedness of robust vector optimization, Giovanni P. Crespi; Daishi Kuroiwa; Matteo Rocca, *Annals of Operations Research.* Vol. 251 no.1-2, 89–104, 2017
- Robust games: theory and application to a Cournot duopoly model; Giovanni P. Crespi; Davide Radi; Matteo Rocca, *Decisions in Economics and Finance* Vol 40 no. 1-2 177–198 2017

E' socio dell'AMASES, del "Working Group on Generalized Convexity and Monotonicity", della "Mathematical Optimization Society", del "Research Group on Mathematical Inequalities and Applications", del "Pacific Optimization Group" e della "Mathematical Association of America".

Ha coordinato il progetto CARIPLO "Reti locali e globali per educare all'innovazione".

E' stato proponente ed è attualmente coordinatore del Corso di Dottorato di Ricerca "Metodi e Modelli per le Decisioni Economiche" attivato presso l'Università degli Studi dell'Insubria.

COMUNICAZIONI INVITATE IN CONVEGNI

Ha partecipato anche come invited speaker a numerosi convegni internazionali. Si segnalano:

- Invited talk: Spring Conference of the Union of Bulgarian Mathematicians (Borovets, 2008)
- Invited talk: World Congress of Nonlinear Analysts (Orlando, Florida, 2008),
- Invited talk: Sino-Japanese Optimization Meeting (Tainan, Taiwan, 2008)
- Keynote speaker: Set Optimization with Applications Conference (Wien, 2016).

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COMUNICAZIONI INVITATE IN RIVISTE

- Invited paper:: Journal of Industrial and Management Optimization, First Issue, Two approaches toward constrained vector optimization and identity of solutions (2005), con G.P. Crespi e I Ginchev. .

ATTIVITA' COME VISITING PROFESSOR

E' stato Visiting Professor presso:

- Technical University of Varna (Bulgaria), 2005
- Babes Bolyai University, Cluj-Napoca (Romania), 2010
- Niigata University, Niigata (Japan), 2011
- Busan University (South Korea), 2011
- Shimane University, Matsue (Japan), 2014
- Shimane University, Matsue (Japan), 2015

ATTIVITÀ EDITORIALE E DI REFERAGGIO

Svolge attività di referee per numerose riviste internazionali quali :

- Nonlinear Analysis-TMA,
- Journal of Optimization Theory and Applications,
- Journal of Global Optimization,
- European Journal of Operations Research,
- Optimization,
- Mathematical Methods of Operations Research,
- Real Analysis Exchange,
- Journal of Inequalities in Pure and Applied Mathematics,
- Annals of Operations Research.

E' stato editor dei seguenti volumi:

- Ottimizzazione nelle Applicazioni Economiche, Finanziarie e Industriali (Proceedings

del Workshop tenuto a Verona, giugno 2001), Ed. Datanova

- Recent Advances in Optimization" (Proceedings Workshop tenuto a Varese, giugno 2002), Ed. Datanova.

Ha svolto attività di valutazione di progetti di ricerca nazionali e per la Bulgarian Academy of Sciences e la Georgia National Science Foundation.

ORGANIZZAZIONE DI INIZIATIVE

Ha organizzato i seguenti convegni:

- XXXVII Meeting of the Italian Association for Mathematics Applied to Economic and Social Sciences September 5-7, 2013, Stresa
- 8th Symposium on "Generalized Convexity and Generalazied Monotonicity" Varese, luglio 2005
- Ottimizzazione
  Varese, 13/14 giugno 2002
- Ottimizzazione nelle Applicazioni Economiche, Finanziarie e Industriali
  Verona, 14/15 giugno 2001

ATTIVITA' GESTIONALE

E' stato Preside della Facoltà di Economia dal primo ottobre 2008 e Direttore del Dipartimento di Economia dal primo ottobre 2011.
Durante il suo mandato ha promosso la nascita del primo corso di laurea magistrale in lingua inglese e con doppio titolo dell'Università degli Studi dell'Insubria.

E' Direttore della Scuola di Dottorato dell''Università degli Studi dell'Insubria.

PUBBLICAZIONI SCIENTIFICHE

1. Crespi, Giovanni P.; Kuroiwa, Daishi; Rocca, Matteo Robust optimization: Sensitivity to uncertainty in scalar and vector cases, with applications, Oper. Res. Perspect., to appear.

2. Crespi, Giovanni Paolo; Radi, Davide; Rocca, Matteo Robust games: theory and application to a Cournot duopoly model. Decis. Econ. Finance 40 (2017), no. 1-2, 177–198.

3. Crespi, Giovanni P.; Kuroiwa, Daishi; Rocca, Matteo Quasiconvexity of set-valued maps assures well-posedness of robust vector optimization. Ann. Oper. Res. 251 (2017), no. 1-2, 89–104.

4. Kuroiwa, Daishi; Popovici, Nicolae; Rocca, Matteo A characterization of cone-convex vector-valued functions. Carpathian J. Math. 32 (2016), no. 1, 79–85.

5. Crespi, Giovanni P.; Rocca, Matteo; Schrage, Carola Variational inequalities characterizing weak minimality in set optimization. J. Optim. Theory Appl. 166 (2015), no. 3, 804–824.

6. Kuroiwa, Daishi; Popovici, Nicolae; Rocca, Matteo A characterization of cone-convexity for set-valued functions by cone-quasiconvexity. Set-Valued Var. Anal. 23 (2015), no. 2, 295–304.

7. Crespi, Giovanni P.; Kuroiwa, Daishi; Rocca, Matteo Convexity and global well-posedness in set-optimization. Taiwanese J. Math. 18 (2014), no. 6, 1897–1908.

8. Popovici, Nicolae; Rocca, Matteo Scalarization and decomposition of vector variational inequalities governed by bifunctions. Optimization 62 (2013), no. 6, 735–742.

9. Popovici, Nicolae; Rocca, Matteo Decomposition of generalized vector variational inequalities. Nonlinear Anal. 75 (2012), no. 3, 1516–1523.

10. Crespi, Giovanni P.; Papalia, Melania; Rocca, Matteo Extended well-posedness of vector optimization problems: the convex case. Taiwanese J. Math. 15 (2011), no. 4, 1545–1559.

11. La Torre, Davide; Popovici, Nicolae; Rocca, Matteo A note on explicitly quasiconvex set-valued maps. J. Nonlinear Convex Anal. 12 (2011), no. 1, 113–118.

12. Luc, Dinh The; Rocca, Matteo; Papalia, Melanie Equilibrium in a vector supply-demand network with capacity constraints. Appl. Anal. 90 (2011), no. 6, 1029–1045.

13. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Second-order Dini set-valued directional derivative in C 1,1 vector optimization. Optim. Methods Softw. 25 (2010), no. 1, 75–87.

14. Ginchev, Ivan; La Torre, Davide; Rocca, Matteo $C^{k,1}$ functions, characterization, Taylor's formula and optimization: a survey. Real Anal. Exchange 35 (2010), no. 2, 311–341.

15. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Minty variational principle for set-valued variational inequalities. Pac. J. Optim. 6 (2010), no. 1, 39–56.

16. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Locally Lipschitz vector optimization with inequality and equality constraints. Appl. Math. 55 (2010), no. 1, 77–88.

17. La Torre, Davide; Popovici, Nicolae; Rocca, Matteo Scalar characterizations of weakly cone-convex and weakly cone-quasiconvex functions. Nonlinear Anal. 72 (2010), no. 3-4, 1909–1915.

18. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Existence of solutions of Minty type scalar and vector variational inequalities. Optimization 58 (2009), no. 7, 791–808.

19. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Dini set-valued directional derivative in locally Lipschitz vector optimization. J. Optim. Theory Appl. 143 (2009), no. 1, 87–105.

20. Crespi, Giovanni P.; Papalia, Melania; Rocca, Matteo Extended well-posedness of quasiconvex vector optimization problems. J. Optim. Theory Appl. 141 (2009), no. 2, 285–297.

21. Miglierina, Enrico; Molho, Elena; Rocca, Matteo Critical points index for vector functions and vector optimization. J. Optim. Theory Appl. 138 (2008), no. 3, 479–496.

22. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Some remarks on the Minty vector variational principle. J. Math. Anal. Appl. 345 (2008), no. 1, 165–175.

23. Crespi, Giovanni P.; Ferrentino, Rosa; Rocca, Matteo Increasing along rays vector functions. Int. J. Pure Appl. Math. 44 (2008), no. 1, 9–22.

24. Ginchev, Ivan; Rocca, Matteo On constrained set-valued optimization. C. R. Acad. Bulgare Sci. 60 (2007), no. 12, 1277–1282.

25. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Some remarks on set-valued Minty variational inequalities. Vietnam J. Math. 35 (2007), no. 1, 81–106.

26. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Stability of property efficient points and isolated minimizers of constrained vector optimization problems. Rend. Circ. Mat. Palermo (2) 56 (2007), no. 1, 137–156.

27. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo; Rubinov, Alexander Convex along lines functions and abstract convexity. I. J. Convex Anal. 14 (2007), no. 1, 185–204.

28. Crespi, Giovanni P.; Guerraggio, Angelo; Rocca, Matteo Well posedness in vector optimization problems and vector variational inequalities. J. Optim. Theory Appl. 132 (2007), no. 1, 213–226.

29. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Geoffrion type characterization of higher-order properly efficient points in vector optimization. J. Math. Anal. Appl. 328 (2007), no. 2, 780–788.

30. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Higher order properly efficient points in vector optimization. Generalized convexity and related topics, 227–245, Lecture Notes in Econom. and Math. Systems, 583, Springer, Berlin, 2007.

31. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Points of efficiency in vector optimization with increasing-along-rays property and Minty variational inequalities. Generalized convexity and related topics, 209–226, Lecture Notes in Econom. and Math. Systems, 583, Springer, Berlin, 2007.

32. Rocca, Matteo Well-posed vector optimization problems and vector variational inequalities. J. Inf. Optim. Sci. 27 (2006), no. 2, 259–270.

33. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo First-order optimality conditions in constrained set-valued optimization. Pac. J. Optim. 2 (2006), no. 2, 225–239.

34. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo First-order optimality conditions in set-valued optimization. Math. Methods Oper. Res. 63 (2006), no. 1, 87–106.

35. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Increasing-along-rays property for vector functions. J. Nonlinear Convex Anal. 7 (2006), no. 1, 39–50.

36. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo From scalar to vector optimization. Appl. Math. 51 (2006), no. 1, 5–36.

37. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Second-order conditions in $C^{1,1}$ vector optimization with inequality and equality constraints. Recent advances in optimization, 29–44, Lecture Notes in Econom. and Math. Systems, 563, Springer, Berlin, 2006.

38. La Torre, Davide; Rocca, Matteo On $C^{1,1}$ optimization problems. J. Comput. Anal. Appl. 7 (2005), no. 4, 383–395.

39. La Torre, Davide; Rocca, Matteo $C^{1,1}$ functions and optimality conditions. J. Concr. Appl. Math. 3 (2005), no. 1, 41–54.

40. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo A note on Minty type vector variational inequalities. RAIRO Oper. Res. 39 (2005), no. 4, 253–273 (2006).

41. Crespi, Giovanni P.; Rocca, Matteo Monotone trajectories of dynamical systems and Clarke's generalized Jacobian. JIPAM. J. Inequal. Pure Appl. Math. 6 (2005), no. 5, Article 142, 8 pp.

42. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Existence of solutions and star-shapedness in Minty variational inequalities. J. Global Optim. 32 (2005), no. 4, 485–494.

43. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Two approaches toward constrained vector optimization and identity of the solutions. J. Ind. Manag. Optim. 1 (2005), no. 4, 549–563.

44. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Second-order conditions in $C^{0,1}$ constrained vector optimization. Math. Program. 104 (2005), no. 2-3, Ser. B, 389–405.

45. Miglierina, E.; Molho, E.; Rocca Matteo Well-posedness and scalarization in vector optimization. J. Optim. Theory Appl. 126 (2005), no. 2, 391–409.

46. Ginchev, I.; Guerraggio, A.; Rocca, Matteo First-order conditions for $C^{0,1}$ constrained vector optimization. Variational analysis and applications, 427–450, Nonconvex Optim. Appl., 79, Springer, New York, 2005.

47. Crespi, G. P.; Ginchev, I.; Rocca, Matteo Variational inequalities in vector optimization. Variational analysis and applications, 259–278, Nonconvex Optim. Appl., 79, Springer, New York, 2005.

48. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Isolated minimizers and proper efficiency for $C^{0,1}$ constrained vector optimization problems. J. Math. Anal. Appl. 309 (2005), no. 1, 353–368.

49. Crespi, Giovanni P.; La Torre, Davide; Rocca, Matteo Second order optimality conditions for nonsmooth multiobjective optimization problems. Generalized convexity, generalized monotonicity and applications, 213–228, Nonconvex Optim. Appl., 77, Springer, New York, 2005.

50. Crespi, Giovanni P.; Guerraggio, Angelo; Rocca, Matteo Minty variational inequality and optimization: scalar and vector case. Generalized convexity, generalized monotonicity and applications, 193–211, Nonconvex Optim. Appl., 77, Springer, New York, 2005.

51. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo $C^{1,1}$ vector optimization problems and Riemann derivatives. Control Cybernet. 33 (2004), no. 2, 259–273.

52. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Minty variational inequalities, increase-along-rays property and optimization. J. Optim. Theory Appl. 123 (2004), no. 3, 479–496.

53. Crespi, Giovanni P.; Rocca, Matteo Minty variational inequalities and monotone trajectories of differential inclusions. JIPAM. J. Inequal. Pure Appl. Math. 5 (2004), no. 2, Article 48, 13 pp.

54. La Torre, Davide; Rocca, Matteo Mean value theorem for continuous vector functions by smooth approximations. Appl. Math. Lett. 17 (2004), no. 7, 791–794.

55. Crespi, Giovanni P.; Ginchev, Ivan; Rocca, Matteo Minty vector variational inequality, efficiency and proper efficiency. Vietnam J. Math. 32 (2004), no. 1, 95–107.

56. Crespi, Giovanni P.; La Torre, Davide; Rocca, Matteo Mollified derivatives and second-order optimality conditions. J. Nonlinear Convex Anal. 4 (2003), no. 3, 437–454.

57. Crespi, Giovanni P.; Rocca, Matteo; Ginchev, Ivan On a connection between Minty variational inequalities and generalized convexity. Recent advances in optimization (Varese, 2002), 35–40, Datanova, Milan, 2003.

58. Crespi, Giovanni P.; La Torre, Davide; Rocca, Matteo Second-order mollified derivatives and optimization. Rend. Circ. Mat. Palermo (2) 52 (2003), no. 2, 251–262.

59. La Torre, Davide; Rocca, Matteo Remarks on second order generalized derivatives for differentiable functions with Lipschitzian Jacobian. Appl. Math. E-Notes 3 (2003), 130–137.

60. La Torre, Davide; Rocca, Matteo A survey on $C^{1,1}$ functions: theory, numerical methods and applications. IV International Conference in "Stochastic Geometry, Convex Bodies, Empirical Measures & Applications to Engineering Science", Vol. II (Tropea, 2001). Rend. Circ. Mat. Palermo (2) Suppl. No. 70, part II (2002), 75–93.

61. Crespi, Giovanni P.; La Torre, Davide; Rocca, Matteo Second order optimality conditions with C^1 data. Optimization in economics, finance and industry (Verona, 2001), 159–170, Datanova, Milan, 2002.

62. La Torre, Davide; Rocca, Matteo Approximating continuous functions by iterated function systems and optimization problems. Int. Math. J. 2 (2002), no. 8, 801–811.

63. La Torre, Davide; Rocca, Matteo Integral representation of functions: new proofs of classical results. Rend. Sem. Mat. Messina Ser. II 8(23) (2001/02), 261–269 (2004).

64. La Torre, Davide; Rocca, Matteo A characterization of $C^{k,1}$ functions. Real Anal. Exchange 27 (2001/02), no. 2, 515–534.

65. La Torre, Davide; Rocca, Matteo Almost everywhere convex functions on R^n and weak derivatives. Rend. Circ. Mat. Palermo (2) 50 (2001), no. 3, 405–414.

66. La Torre, Davide; Rocca, Matteo A characterization of almost everywhere convex functions. J. Interdiscip. Math. 4 (2001), no. 1, 49–60.

67. La Torre, Davide; Rocca, Matteo Higher order uniform smoothness and differentiability of real functions. Real Anal. Exchange 26 (2000/01), no. 2, 657–667.

68. Ginchev, Ivan; Rocca, Matteo On Peano and Riemann derivatives. Rend. Circ. Mat. Palermo (2) 49 (2000), no. 3, 463–480.

69. La Torre, Davide; Rocca, Matteo Iterated function systems and optimization problems. Rend. Sem. Mat. Messina Ser. II 6(21) (1999), 165–173 (2001).

70. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Equivalence of (n+1) -th order Peano and usual derivatives for n -convex functions. Real Anal. Exchange 25 (1999/00), no. 2, 513–520.

71. La Torre, Davide; Rocca, Matteo $C^{k,1}$ functions and Riemann derivatives. Real Anal. Exchange 25 (1999/00), no. 2, 743–752.

72. La Torre, Davide; Rocca, Matteo Some remarks about weak derivatives in convex functions theory. Generalized convexity and optimization for economic and financial decisions (Verona, 1998), 261–269, Pitagora, Bologna, 1999.

73. Ginchev, Ivan; Guerraggio, Angelo; Rocca, Matteo Equivalence of Peano and Riemann derivatives. Generalized convexity and optimization for economic and financial decisions (Verona, 1998), 169–178, Pitagora, Bologna, 1999.

Varese, 4 maggio 2018

F.to Prof. Matteo Rocca

Curriculum vitae ed elenco delle pubblicazioni di Matteo Rocca