Marco Lops

Curriculum vitae et studiorum

Address Università degli Studi di Napoli "Federico II"
Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione (DIETI)
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Education

1986 "Laurea" Degree (5 years) in Electronic Engineering (Federico II, Naples)
1992 Ph. D. in Electronic and Computer Engineering (Federico II, Napoli)

Scholarsips/Fellowships

1987 ELSAG Scholarship (Federico II, Napoli - Tutor E. Conte)
1990/91 National Research Council (CNR) fellowship (University of Connecticut, Storrs, USA)
1998 National Research Council (CNR) fellowship (Rice University, Texas, USA)
1998 NATO/CNR Fellowship (Rice University, Texas, USA)

Permanent Positions (Academia and Industry)

2018- Professor - University of Naples "Federico II"
2000-2018 Professor - University of Cassino and Southern Latium (UNICALM)
(2009-2010 on leave of absence)
2009-2010 Professor - ENSEEIHT , Université de Toulouse, France
(After National Abilitation and a local competition at
Ecole Nationale Superieure de Electrotechnique, Electronique, Informatique, Hydraulique et Telecomunications, ENSEEIHT)
1991-2000 Associate Professor - University of Naples "Federico II"
1989-1991 Assistant Professor - University of Naples "Federico II"
1986-1987 Radar System Engineer, Selenia (now Leonardo, Rome).

Temporary Academic Positions in other Institutions

March-September 1991	Visiting Research Scholar - University of Connecticut (USA)
June-December 1998	Visiting Research Scholar - Rice University (Houston, Texas, USA)
October-December 2000	Visiting scholar - Princeton University (New Jersey, USA)
August-December 2008	Visiting Professor - University of Minnesota (Minnesota, USA) (*course taught: Digital Communications, Graduate*)
January-June 2009	Visiting Professor - Columbia University (NYC, NY, USA) (*course taught: Information Theory, Graduate*)
September 2010-March 2012	Visiting Professor - ENSEEIHT, Université de Toulouse (Toulouse, France) (*courses: Information Theory, Digital Communications, Telecom. Systems*)
September 2011-March 2012	Visiting Professor - ENSEEIHT, Université de Toulouse (Toulouse, France) (*courses: Information Theory, Digital Communications, Telecom. Systems*)

Administrative Experience

2000-2003	Dept. delegate to the Center for International Relationships (UNICALM)
2003-2009	Director of the studies in Communications Engineering (UNICALM)
2013-2016	Chairperson for the National Habilitation Committee in Communications Engineering

Training of new researchers (percentages refer to co-advised students)

Nome e Cognome	*Issuing Institution and Period*	*Current Job*
Giuseppe Ricci (30 %)	Federico II (1990-1993) (Conte)	Professor, University of Salento
Stefano Buzzi (100 %)	Federico II (1995-1998)	Professor, UNICALM
Antonia M. Tulino (70 %)	SUN (1995-1998) (Paura)	Professor, Federico II
Antonio Pauciullo (80 %)	Federico II (1999-2002) (Conte)	Researcher, CNR
Stefania Sardellitti (80 %)	UNICALM (2001-2004)	”Research Fellow” University ”La Sapienza”
Emanuele Grossi (100 %)	UNICALM (2002-2005)	Assistant Professor UNICALM (with Habilitation to Associate Professor)
Luca Venturino (100 %)	UNICALM (2002-2005)	Associate Professor, UNICALM (with Habilitation to full Professor)
Goffredo Foglia (20 %)	UNICALM (2003-2006)	Radar Engineer with ”Elettronica” (Roma) (with Habilitation to Associate Professor)
Daniele Angelosante (100 %)	UNICALM (2005-2008)	Senior Scientist with ABB Research Center - Zurigo
Nil Garcia (33 %)	ENSEEIHT e New Jersey Institute of Technology (2009-2014)	Post-doctoral fellow presso Chalmers University of Technolgy (Svezia) co-tutor: A. Haimovich (NJIT)/M. Coulon

Awards and Honors

Year	Award/Honor
2017	IEEE Signal Processing Society Distinguished Lecturer (2018-2020).
2014	Best Paper Award form *Journal of Communications and Networks* (with Ezio Biglieri, University Pompeu Fabra, Barcellona)
2010	Prime d'Excellence Scientifique (PES), Ministry of Education of France

Society Membership

Marco Lops has been a member of the Institution of Electrical and Electronic Engineers (*IEEE*) since 1996. He is an IEEE Fellow (FIEEE).

Editorial Activity

Journal	Job
IEEE Transactions on Information Theory	Associate Editor (2020-)
IEEE Transactions on Signal Processing	Senior Area Editor (2019-)
IEEE Transactions on Signal Processing	Associate Editor (2014-2018)
IEEE Signal Processing Letters	Associate Editor (2014-2017)
IEEE Transactions on Information Theory	Associate Editor (2009-2012)
Journal of Communications and Networks	Associate Editor (2001-2011)

Technical Committees

2009-2015: He served two terms (2009-2012 and 2012-2015) as member of the *Sensor Array and Multi-Channel Technical Committee (SAM, IEEE Signal Processing Society)*.

Organization tasks in International Conferences

- "TPC member" for several international conferences, including some editions of IEEE-SAM (*ex-officio*), *IEEE CAMSAP*, *IEEE ISIT*, *IEEE ITW*, *IEEE SPAWC*.
- Special Session organizer in several conferences (CAMSAP 2009, SAM 2010, Eusipco 2010, DSP 2011, CAMPSAP 2013, ASILOMAR 2018).
- "Tutorial Chair" for IEEE- Radar Conference (2008, Rome);
- "Technical Area Chair" (track Array Signal Processing) for ASILOMAR 2016 (Pacific Grove, USA);
- "Area Chair" for the 26-esima European Signal Processing Conference (EUSIPCO 2018), Rome, 3-7 September 2018.
- Special Session co-chair for Radar 2020 (Florence, 2020).

Research

Research Areas

Subject	Period
Methodological aspects of Detection and Estimation	1988-2018
Clutter Models in Radar Systems	1988-1995
Adaptive Detection in clutter with unknown statistics	1988-2000
Multi-User Detection in Wireless Systems	1995-2018
Dynamic Programming Algorithms for advanced radar systems	2003-2019
MIMO Radar	2005-2019
"Random Set Theory" application to wireless communications	2005-2019
Dual Function Radar-Communications	2016-2019
5G exploitation for Automotive Radar	2016-2019

Impact:

Google Scholar (January 2021): # cites $\simeq 6300$, $h = 39$, $i10 = 92$.

SCOPUS: # cites > 4000, $h = 33$.

Papers

Journal Papers	95
Proceedings of International Conferences	127

Papers published on refereed journals

95. E. Grossi, M. Lops, L. Venturino, "Adaptive detection and localization exploiting the IEEE 802.11 ad standard", *IEEE Transactions on Wireless Communications*, *Early Access*, April 2020.

94. E. Grossi, M. Lops, L. Venturino "Joint Design of surveillance radar and MIMO communication in cluttered environments", *IEEE Transactions on Signal Processing*, Vol. 68, pp. 1544-1557, February 2020.

93. C. D'Andrea, S. Buzzi, M. Lops,"Communications and Radar Coexistence in the Massive MIMO Regime: Uplink Analysis", *IEEE Transactions on Wireless Communications*, Vol. 19, No. 1, pp. 19-33, January 2020.

92. Y. Li, L. Zheng, M. Lops, X. Wang, "Interference Removal for Radar/Communication Co-Existence: The Random Scattering Case", *IEEE Transactions on Wireless Communications*, Vol. 18, No. 10, pp. 4831-4845, October 2019.

91. L. Zheng, M. Lops, Y. C. Eldar, X. Wang, "Radar and Communication Co-Existence. An Overview: a review of recent methods", *IEEE Signal Processing Magazine*, Vol.36, No. 5, pp. 85-99, September 2019.

90. E. Grossi, M. Lops, L. Venturino, "Detection rate optimization for Swerling target models", *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 55, No. 4, pp. 2054-2065, August 2019.

89. J. Qian, M. Lops, L. Zheng, X. Wang, Z. He, "Joint System Design for Co-existence of MIMO Radar and MIMO Communication", *IEEE Transactions on Signal Processing*, Vol. 66, N. 13, pp. 3504-3519, July 2018.

88. E. Grossi, M. Lops, L. Venturino, A. Zappone, "Opportunistic radar in IEEE 802.11ad networks", *IEEE Transactions on Signal Processing*, Vol. 66, N. 9, pp. 2441-2454, May 2018.

87. S. D'Oro, A. Zappone, S. Palazzo, M. Lops, "A learning approach for low-complexity optimization of energy efficiency in multi-carrier networks", *IEEE Transactions on Wireless Communications*, Vol. 17, N. 5, pp. 3226-3241, May 2018.

86. L. Zheng, M. Lops, X. Wang "Adaptive Interference Removal for un-coordinated Radar/Communication Co-existence", *IEEE Journal on Selected Topics on Signal Processing*, special issue on *Machine Learning for Cognition in Communications and Radar*, Vol. 12, No. 1, pp. 45-60, February 2018.

85. E. Grossi, M. Lops, L. Venturino, "Design of transmit beam-width and dwell time under K-distributed clutter and Gaussian noise," *IEEE Transactions on Aerospace and Electronic Systems*, 2018.

84. $\star$ L. Zheng, M. Lops, X. Wang, E. Grossi, "Joint Design of Overlaid Communication Systems and Pulsed Radars", *IEEE Transactions on Signal Processing*, pp. 139-154, January 2018.

83. E. Grossi, M. Lops, L. Venturino, "Two-step Sequential Detection in Agile-beam Radars: Performance and Trade-offs", *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 53, no. 5, pp. 2199-2213, Oct. 2017.

82. $\star$ E. Grossi, M. Lops, L. Venturino, "A new look at the Radar Detection Problem", *IEEE Transactions on Signal Processing*, November 2016, pp. 5835-5847.

81. E. Grossi, M. Lops, L. Venturino, A. Aprile, "Track Before Detect for Sea-Clutter Rejection: Tests with real data", *IEEE Transactions on Aerospace and Electronic Systems* June 2016, pp. 1035-1045.

80. E. Biglieri, M. Lops, "Linear-quadratic detectors for spectrum sensing", *Journal on Communications and Networks*, October 2014, pp. 485-492 (awarded the *2014 Best Paper Award*).

79. E. Grossi, M. Lops, L. Venturino, "Track-before-detect for multi-frame detection with censored observations", *IEEE Transactions on Aerospace and Electronic Systems*, July 2014, 2032-2046.

78. ⋆ N. Garcia, M. Coulon, A. Haimovich, M. Lops, "Resource allocation in MIMO radar with multiple targets for non-coherent localization", *IEEE Transactions on Signal Processing*, May 2014, pp. 2656 - 2666.

77. E. Grossi, M. Lops. L. Venturino "A track-before-detect algorithm with thresholded observations and closely-spaced targets", *IEEE Signal Processing Letters*, 2013, pp. pp. 1171-1174.

76. E. Grossi, M. Lops. L. Venturino "A Heuristic Algorithm for Track-Before-Detect With Thresholded Observations in Radar Systems", *IEEE Signal Processing Letters*, August 2013, pp. pp. 811-814.

75. ⋆ E. Grossi, M. Lops. L. Venturino "A novel dynamic programming algorithm for track-before-detect in radar systems", *IEEE Transactions on Signal Processing* , May 2013, pp. pp. 2608-2619.

74. E. Biglieri, E. Grossi, M. Lops, "Random Set Theory and Wireless Communications", *Foundations and Trends in Communications and Information Theory*, August 2012.

73. ⋆ E. Grossi, M. Lops, "Space-Time Code design for MIMO detection based on Kullback-Leibler divergence", *IEEE Transactions on Information Theory*, June 2012, pp. 3989 - 4004.

72. E. Grossi, M. Lops, L. Venturino, "Min-max waveform design for MIMO radars under unknown correlation of the target scattering", *Signal Processing*, May 2012, pp. pp. 1550-1558.

71. E. Grossi, M. Lops, L. Venturino, "Robust Waveform Design for MIMO Radars", *IEEE Transactions on Signal Processing*, Vol. 59, No. 7, pp. 3262-3271, July 2011.

70. M. L. Boucheret, M. Dervin, C. Dudal, M.Lops, N. Thomas, "Spectral- and Power-Efficient Data Multiplexing Format Based on Code-Shift-Keying", *IEEE Communications Letters*, July 2011, pp. 3262-3271.

69. G. H. Jajamovich, M. Lops, X. Wang, "Space-Time Coding for MIMO Radar Detection and Ranging", *IEEE Transactions on Signal Processing*, December 2010, pp. 6195 - 6206.

68. ⋆ A. Aubry, M. Lops, A. M. Tulino, L. Venturino, "On MIMO Detection under non-Gaussian Scattering Targets", *IEEE Transactions on Information Theory*, November 2010, pp. 5822 - 5838.

67. D.Angelosante, E. Grossi, G. B. Giannakis, M. Lops, "Parameters estimation in CDMA systems exploiting sparsity", *EURASIP Journal on Applied on Signal Processing*, 2010, pp. 1-10.

66. D. Angelosante, E. Biglieri, M. Lops, "Low Complexity receivers for multiuser detection with an unknown number of active users", *Signal Processing,* May 2010, pp. 1486-1495.

65. D. Angelosante, E. Biglieri, M. Lops, "Neighbor Discovery in Wireless Networks: A Multiuser-Detection Approach", *Physical Communication*, March 2010, pp. 28-36.

64. D. Orlando, L. Venturino, M. Lops, G. Ricci, "Track-Before-Detect Strategies for STAP radar", *IEEE Transactions on Signal Processing*, March 2010, pp. 933-938.

63. D. Angelosante, E. Biglieri, M. Lops, "Sequential estimation of multipath MIMO-OFDM channels", *IEEE Transactions on Signal Processing*, August 2009, pp. 3167-3181.

62. ⋆ D. Angelosante, E. Biglieri, M. Lops, "Multiuser Detection in dynamic environment - Part II: Joint User Identification and Parameter Estimation", *IEEE Transactions on Information Theory*, May 2009, pp. 2365-2374.

61. A. De Maio, M. Lops, L. Venturino (2008). "Diversity-Integration Tradeoffs in MIMO Detection", *IEEE Transactions on Signal Processing* vol. 56, pp. 5051-5061.

60. E. Grossi, M. Lops (2008). "Sequential Along-Track Integration for Early Detection of Moving Targets," *IEEE Transactions on Signal Processing*, vol. 56, pp. 3969-3982.

59. E. Grossi, M. Lops (2008). "Sequential Detection of Markov Targets With Trajectory Estimation," *IEEE Transactions on Information Theory*, vol. 54, pp. 4144-4154.

58. S. Buzzi, M. Lops, L. Venturino, M. Ferri (2008). "Track-before-detect procedures in multi-targets environments," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 44, no. 3, pp. 1135-1150.

57. ⋆ E. Biglieri, M. Lops (2007). "Multiuser detection in a dynamic environment - Part I: User identification and data detection," *IEEE Transactions on Information Theory*, pp. 3158-3170.

56. ⋆ A. De Maio, M. Lops (2007). "Design Principles of MIMO Radar Detectors," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 43, pp. 886-898.

55. E. Grossi, M. Lops, L. Venturino (2007). "Blind Schemes for Asynchronous CDMA Systems on Dispersive MIMO Channels", *IEEE Transactions on Wireless Communications*, vol. 6, pp. 2066-2075.

54. S. Buzzi, M. Lops, S. Sardellitti (2006). "Widely linear reception strategies for layered space-time wireless communications," *IEEE Transactions on Signal Processing*, vol. 54, pp. 2252-2262.

53. A. De Maio, R. Episcopo, M. Lops, A. Pauciullo (2006). "Recursive algorithms for multiuser detection over DS-CDMA channels", *IEEE Transactions on Communications*, vol. 54, pp. 192-196.

52. ⋆ L. Venturino, X. Wang, M. Lops (2006). "Multiuser detection for cooperative networks and performance analysis," *IEEE Transactions on Signal Processing*, vol. 54, pp. 3315-3329.

51. S. Buzzi, M. Lops, S. Sardellitti (2005). "Further results on Cramer-Rao bounds for parameter estimation in long-code DS/CDMA systems," *IEEE Transactions on Signal Processing*, vol. 53, pp. 1216-1221.

50. ⋆ S. Buzzi, M. Lops, L. Venturino (2005) "Track-Before-Detect Procedures for Early Detection of Moving Target from Airborne Radars," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 41, pp. 937-954.

49. S. Buzzi, E. Grossi, M. Lops (2004). "Timing-Free Blind Multiuser Detection for Multicarrier DS/CDMA Systems with Multiple Antennae," *Eurasip Journal On Applied Signal Processing*, vol. 2004-5, pp. 613-629.

48. S. Buzzi, M. Lops, S. Sardellitti (2004). "Performance of iterative data detection and channel estimation for single-antenna and multiple-antennas wireless communications," *IEEE Transactions on Vehicular Technology*, vol. 53, pp. 1085-1104.

47. S. Buzzi, M. Lops, L. Venturino (2004). "Blind multiantenna receivers for dispersive DS/CDMA channels with no channel-state information," *IEEE Transactions on Signal Processing*, vol. 52, pp. 2821-2835.

46. S. Buzzi, A. De Maio, M. Lops (2003). "Code-aided blind adaptive new user detection in DS/CDMA systems with fading time-dispersive channels," *IEEE Transactions on Signal Processing*, vol. 51, pp. 2637-2649.

45. S. Buzzi, V. Krishnamurthy, M. Lops, H.V. Poor (2003). "Blind multiuser detection in multirate CDMA based on cyclic LMS adaptation," *Wireless Personal Communications*, vol. 27, pp. 293-320.

44. S. Buzzi, M. Lops (2003). "Performance analysis for the improved linear multiuser detectors in BPSK-modulated DS-CDMA systems," *IEEE Transactions on Communications*, vol. 51, pp. 37-42.

43. S. Buzzi, M. Lops, A. Pauciullo (2003). "Iterative cyclic subspace tracking for blind adaptive multiuser detection in multirate CDMA systems," *IEEE Transactions on Vehicular Technology*, vol. 52, pp. 1463-1475.

42. S. Buzzi, M. Lops, A. Pauciullo (2003). "Two-stage ML-based group detection for direct-sequence CDMA systems," *Journal of Communications and Networks*, vol. 5, pp. 33-42.

41. S. Buzzi, M. Lops, A. Pauciullo (2003). "Adaptive group detection for DS/CDMA systems over frequency-selective fading channels," *European Transactions on Communications*, vol. 14, pp. 213-226.

40. S. Buzzi, M. Lops, H. V. Poor (2003). "Blind adaptive joint multiuser detection and equalization in dispersive differentially encoded CDMA channels," *IEEE Transactions on Signal Processing*, vol. 51, pp. 1880-1893.

39. ⋆ S. Buzzi, M. Lops, H. V. Poor (2002). "Code-aided interference suppression for DS/CDMA overlay systems," *Proceedings of the IEEE*, vol. 90, pp. 394-435.

38. S. Buzzi, M. Lops, A. M. Tulino (2002). "A generalized minimum-mean-output-energy strategy for CDMA systems with improper MAI," *IEEE Transactions on Information Theory*, vol. 48, pp. 761-767.

37. S. Buzzi, E. Conte, A. De Maio, M. Lops (2001). "Optimum diversity detection over fading dispersive channels with non-Gaussian noise," *IEEE Transactions on Signal Processing*, vol. 49, pp. 767-776.

36. S. Buzzi, A. De Maio, M. Lops, G. Ricci (2001). "Diversity reception of nonorthogonal multipulse signals in multiuser Nakagami fading channels," *IEEE Communications Letters*, pp. 188-190.

35. ⋆ S. Buzzi, M. Lops, A. M. Tulino (2001). "A new family of MMSE multiuser receivers for interference suppression in DS/CDMA systems employing BPSK modulation," *IEEE Transactions on Communications*, vol. 49, pp. 154 -167.

34. S. Buzzi, M. Lops, A. M. Tulino (2001). "Partially blind adaptive MMSE interference rejection in asynchronous DS/CDMA networks over frequency-selective fading channels," *IEEE Transactions on Communications*, vol. 49, pp. 94 -108.

33. S. Buzzi, M. Lops, A. M. Tulino (2001). "Blind adaptive multiuser detection for asynchronous dual-rate DS/CDMA systems," *IEEE Journal of Selected Areas in Communications*, vol. 19, pp. 233 -244.

32. S. Buzzi, M. Lops, A. M. Tulino (2001). "Adaptive detection and channel estimation for dual-rate DS/CDMA networks in frequency-selective fading," *Wireless Personal Communications*, vol. 16, pp. 259-285.

31. S. Buzzi, M. Lops, A. M. Tulino (2000). "MMSE RAKE reception for asynchronous DS/CDMA overlay systems and frequency-selective fading channels," *Wireless Personal Communications*, vol. 13, pp. 295-318.

30. M. Longo, M. Lops, S. Marano (2000). "Performance of decentralized L-CFAR detection in inhomogeneous background, " *IEEE Transactions on Aerospace and Electronic Systems*, vol. 26, pp. 1414-1423.

29. M. Lops, A. M. Tulino (2000). "Simultaneous suppression of multiaccess and narrow-band interference in asynchronous CDMA networks," *IEEE Transactions on Vehicular Technology*, vol. 49, pp. 1705 -1718.

28. S. Buzzi, M. Lops, A. M. Tulino (1999). "Time-Varying Narrow-Band Interference Rejection in Asynchronous Multiuser DS/CDMA Systems over Frequency-Selective Fading Channels," *IEEE Transactions on Communications*, vol. 47, pp. 1523-1536.

27. E. Conte, M. Lops, G. Ricci (1999). "Incoherent radar detection in compound-Gaussian clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 35, pp. 790-800.

26. M. Lops, A. M. Tulino (1999). "Automatic suppression of narrow-band interference in direct-sequence spread-spectrum systems," *IEEE Transactions on Communications*, vol. 47, pp. 1133-1136.

25. ⋆ E. Conte, M. Lops, G. Ricci (1998). "Adaptive detection schemes in compound-Gaussian clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 34, pp. 1058-1069.

24. M. Lops, G. Ricci, A. M. Tulino (1998). "Narrowband-Interference Suppression in Multiuser CDMA Systems," *IEEE Transactions on Communications*, vol. 46, pp. 1163-1175.

23. S. Buzzi, E. Conte, M. Lops (1997). "Optimum Detection over Rayleigh-Fading, Dispersive Channels with non-Gaussian Noise," *IEEE Transactions on Communications*, vol. 45, pp. 1061-1069.

22. S. Buzzi, E. Conte, M. Lops (1997). "Signal detection over Rayleigh-fading channels with non-Gaussian noise," *IEE Proceedings - Communications*, vol. 144, pp. 381-386.

21. E. Conte, M. Lops (1997). "Clutter-map CFAR detection for range-spread targets in non-Gaussian clutter. I. System design," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 33, pp. 432-443.

20. E. Conte, M. Di Bisceglie, M. Lops, (1997). Clutter-map CFAR detection for range-spread targets in non-Gaussian clutter. II. Performance assessment, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 33, pp. 444-455.

19. E. Conte, M. Lops, A. M. Tulino (1997). "Hybrid procedure for CFAR in non-Gaussian clutter", *IEE Proceedings - Radar, Sonar and Navigation*, vol. 144, pp. 361-369.

18. E. Conte, M. Lops, G. Ricci (1996). "Adaptive matched filter detection in spherically invariant noise," *IEEE Signal Processing Letters*, vol. 3, pp. 248-250.

17. M. Longo, M. Lops (1996). "OS-CFAR thresholding in decentralized radar systems," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 32, pp. 1257-1267.

16. M. Lops (1996). "Hybrid clutter-map/L-CFAR procedure for clutter rejection in nonhomogeneous environment," *IEE Proceedings - Radar, Sonar, Navigation*, vol. 143, pp. 239-245.

15. E. Conte, M. Di Bisceglie, M.Longo, M. Lops, (1995). "Canonical detection in spherically invariant noise," *IEEE Transactions on Communications*, vol. 43, pp. 347-353.

14. E. Conte, M. Di Bisceglie, M. Lops (1995). "Optimum Detection of Fading Signals in impulsive noise," *IEEE Transactions on Communications*, vol. 43, pp. 869-876.

13. $\star$ E. Conte, M. Lops, G. Ricci (1995). "Asymptotically optimum radar detection in compound-Gaussian clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 31, pp. 617-625.

12. E. Conte, M. Lops, G. Ricci (1994). "Fitting the exogenous model to measured data," *IEEE Transactions on Instrumentation and Measurement*, vol. 43, pp. 758-763.

11. E. Conte, M. Lops, G. Ricci (1994). "Radar detection in K-distributed clutter," *IEE Proceedings - Radar, Sonar and Navigation*, vol. 141, pp. 116-118.

10. M. Lops, P. K. Willett (1994). "Ll-CFAR: a flexible and robust alternative," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 30, pp. 41-54.

9. M. Guida, M. Longo, M. Lops (1993). "Biparametric CFAR procedures for lognormal clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 29, pp. 798-809.

8. M. Guida, M. Longo, M. Lops (1992). "Biparametric Linear Estimation for CFAR against Weibull Clutter," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 28, pp. 138-152.

7. $\star$ E. Conte, M. Longo, M. Lops (1991). "Modelling and simulation of non-Rayleigh radar clutter," *IEE Proceedings - Part F - Radar and Signal Processing*, vol. 138, pp. 121-130.

6. M. Guida, M. Longo, M. Lops, S. L. Ullo (1991). "Radar detection of signals with unknown parameters in K-distributed clutter," *IEE Proceedings - Part F - Radar and Signal Processing*, vol. 138, pp. 131-138.

5. E. Conte, M. Longo, M. Lops (1989). "Analysis of the excision CFAR detector in the presence of fluctuating targets," *IEE Proceedings - Part F - Radar and Signal Processing*, vol. 136, pp. 290-292.

4. E. Conte, M. Longo, M. Lops (1989) (1989). "Two-Sided Censored Mean-Level Detector for CFAR in Multiple-Target Situations and Clutter Edges," *Alta Frequenza*, vol. 58, pp. 165-174.

3. M. Guida, M. Longo, M. Lops (1989). "Logarithmic Transformations for Extrapolative Estimation of Probability Tails," *Reliability Engineering & System Safety*, vol. 26, pp. 119-133.

2. M. Lops, M. Orsini (1989). "Scan-by-scan averaging CFAR," *IEE Proceedings - Part F - Radar and Signal Processing*, vol. 136, pp. 249-254.

1. E. Conte, M. Longo, M. Lops (1988). "Performance analysis of CA-CFAR in the presence of compound Gaussian clutter," *Electronics Letters*, vol. 24, pp. 782-783.

Research Funding and Organization

During his period with UNICALM, Marco Lops formed and led a research group at UNICALM and established the "Telecommunications and Computer Engineering Laboratory" (http://www.unicas.it/siti/laboratori/lit-laboratorio-di-informatica-e-telecomunicazioni/progetti.aspx). When he left UNICALM the group consisted of

a 1 Full Professor (Buzzi);

b 1 Tenured Associate Professor (Venturino);

c 2 Assistant Professors (Grossi, D'Elia);

d 1 Adjunct Professor (Zappone), currently *Marie Curie* fellow.

Grants/Contracts (diverse roles)

Title	Amount	Period	Issuing Institution
Code Division Multiple Access cellular Systems with terrestrial/satellite Integration	70,000 €	2001-2003	Research Ministry
Innovative Radar Detection and Tracking Algorithms	60,000 €	2004-2006	Research Ministry
Feasibility study and performance analysis of innovative techniques for target detection in radars with electronically scanned antennas	30,000	2004	Finmeccanica (Leonardo)
ARSEL	300,000 €	2007-2011	Research Ministry
Target detection range increase through threshold lowering and multi-scan alarm analysis: Early Target Detection (ETD)	65,000	2011-2012	Finmeccanica (Leonardo)
Radar systems performance improvement through multi-scan plot-lists analysis: Scan to Scan Along Track Integration (SATI)	65,000	2012	Finmeccanica (Leonardo)
Radar systems performance improvement through a two-step scanning policy: Alert-Confirm Detection (ACD)	40,000	2013	Finmeccanica (Leonardo)
Innovative signal processing techniques for radar system with multiple receive beams: Multi-Beam on Receive (MBR) - pt. 1	65,000	2014-2015	Finmeccanica (Leonardo)
Innovative signal processing techniques for radar system with multiple receive beams: Multi-Beam on Receive (MBR) - pt. 2	80,000	2016-2017	Finmeccanica (Leonardo)

Teaching Activity

Some talks/lectures/tutorials

July 2001 "Multiuser Receivers for Wireless Communications on Fading Dispersive Channels", *Summer School in Information Engineering, Brixen* (short course).

December 2005 "Constant False Alarm Rate Tests ", *University of Oulu*, Finlandia.

GJune 2006 "Finite Random Set Theory: a Natural Framework for Multi-User Communications", *Summer School in Information Engineering, Brixen* (short course).

October 2007 "Space-Time Coding for MIMO Radars", *JWCC, Durnstein*.

April 2008 "Diversity-Integration Trade-offs in MIMO Radars", *Columbia University.*

September 2008 "Diversity-Integration Trade-offs in MIMO Detection", *University of Minnesota.*

October 2008 "On Sequential Detection of Dynamical Systems", *Napa Valley, JWCC 2008.*

December 2008 "Finite Random Set Theory: a New Tool for Wireless Communications", *University of Minnesota, (short course).*

April 2009 "Sequential tests for Detection and Tracking of Radar Targets", *City University of New York (CUNY).*

May 2009 "Diversity and Energy Integration in Statistical MIMO Radars", *Princeton University.*

July 2009 "Information-Theoretic Waveform Design for MIMO Radar", *MIMO Radar Workshop, Office of Naval Research-Georgia Tech, San Diego.*

September 2009 "Space-Time Coding in Statistical MIMO Radar", *EURASIP Seminar on Radar Signal Processing: Hot Topics and New Trends.*

June 2011 "MC-CSK: a spectral- and energy-efficient multiplexing format", *Aalborg University, Denmark*.

June 2014 "Trade-offs in MIMO Radar" (insieme a Sergiy Vorobyov), Tutorial tenuto a *Eight IEEE Sensor Array and Signal Processing Workshop* (La Coruna, Spagna).

November 2016 "To Scan or not to Scan, i.e. when time becomes a resource at stake in surveillance radar systems", *Columbia University.*

September 2018 "Co-Existence Between Radar and Communication Systems", Signal Processing Society Distinguished Lecture, *Helsinki University of Technology*, Finland.

Courses taught

University "Federico II" - Napoli

Academic Year	Course #1	Course #2
91-92	TR (V year)	-
92-93	TR (V year)	CE (80 hours, IV year)
93-94	TR (V year)	TNVO (80 h, IV year)
94-95	TR (V year)	TNVO (80 h, IV year)
95-96	TR (V year)	TNVO (80 h, IV year)
96-97	TNVO (IV anno)	- See below
97-98	TNVO (IV anno)	- See below
98-99	TNVO (IV anno)	- See below
99-00	TNVO (IV anno)	- See below
01-02	TII (60 ore)	- See below
02-03	TII (60 ore)	- See below
18-19	FTLCN (96 h)	Wireless Systems (50 h)
19-20	FTLCN (96 h)	Information Theory (48 h)
20-21	ST (72 h)	Information Theory (72 h)

University of Lecce

Academic Year	Course
96-97	CE (IV year)
97-98	CE (IV year)

legenda: TR= Tecniche Radar (Radar Techniques); TNVO=Trasmissione Numerica Vecchio Ordinamento (Digital Communications); CE=Comunicazioni Elettriche (Electrical Communications): 80 hours courses. TII=Teoria dell'Informazione per Informatici (Information Theory for Computer Science), FTLCN=Fundamentals of Telecommunications (96 hours). ST=Teoria dei Segnali.

University of Cassino and Southern Latium (UNICALM)

Academic Year	Course #1	Course #2	Course #3
99-00	TNVO (80 h, IV year)		
00-01	TFA (60 h, I year)	TNVO (80 h, IV year)	
01-02	TFA (I year)	TNVO (80 h, IV year)	TNN (50 h, II year)
02-03	TFA (I year)	TNVO (80 h, IV year)	TNN (50 h, II year)
03-04	TFA (I year)	TN-II (50 h, I year graduate)	TI (50 h, I year graduate)
04-05	TFA (I year)	TI (50 h, I year graduate)	
05-06	TFA (I year)	TI (50 h, I year graduate)	
06-07	TFA (I year)	TI (50 h, I year graduate)	
07-08	TFA (I year)	TI (50 h, I year graduate)	
10-11	$\frac{1}{2}$ TFA (30 h, I anno)	TNN (72 h, II year)	
11-12	PI (48 h)	FTLC (72 h)	
12-13	Reduced Teaching	FTLC (72 h)	
13-14	Reduced Teaching	TIN (72 h)	
14-15	PI (48 h)	IT (72 h)	
15-16	PI (48 h)	IT (72 h)	
16-17	PI (48 h)	IT (72 h)	
17-18	PI (48 h)	IT (72 h)	

legenda: TFA= Teoria dei Fenomeni Aleatori (Random Processes); TNN=Trasmissione Numerica I (Digital Communications, undergraduate); TN-II=Trasmissione Numerica II (Digital Communications, graduate); TI=Teoria dell'Informazione (Information Theory, graduate); PI=Probabilità e Informazione (Probability and Information, undergraduate); TNN=Trasmissione Numerica (Digital Communications, new),FTLC=Fondamenti di Telecomunicazioni (Fundamentals of Telecommunications); TIN=Teoria dell'Informazione (Information Theory, extended course, graduate); IT=Information Theory (Information Theory,taught in English, graduate).

University of Minnesota, Minneapolis (MN), USA

Anno Accademico	Corso
08-09 (fall)	Digital Communications (graduate, 40 ore)

Columbia University, New York City (NY), USA

Anno Accademico	Corso
08-09 (spring)	Information Theory (graduate, 40 ore)

ENSEEIHT, Toulouse, Francia

Anno Accademico	Corsi	Note
09-10	ChEq, DE, WiComm, IT, CDMA	Professore di ruolo, 150 ore
10-11	ChEq, DE, WC, IT, CDMA	Visiting Professor, 150 ore
11-12	DE, IT	Visiting Professor, 40 ore

legenda: ChEq= Channel Equalization; DE= Detection and Estimation; WiComm= Wireless Communications; IT= Information Theory; CDMA= Code-Division Multiple Access Systems.

Online Teaching

Anno	Corso	Note
2001	Teledoctorate (post lauream, 10 ore)	See below
2003	Electrical Communications, NETTUNO	Recorded at RAI - Naples
2003	Teledoctorate (post lauream, 10 ore)	See below