

# CURRICULUM VITAE



## PERSONAL INFORMATION

First name(s) / Surname(s) **Martina Teresa Bevacqua**  
E-mail *[martina.bevacqua@unirc.it](mailto:martina.bevacqua@unirc.it)*  
Nationality Italian  
Date of birth 23 August 1988

## WORK EXPERIENCE AND EDUCATION

From April 2017 **Assistant Professor** at University Mediterranea, Reggio Calabria, Italy

September 2016 – January 2017 **Postdoctoral Research Fellow** at University Mediterranea, Reggio Calabria, Italy

November - December 2016 **Visiting Researcher** at Delft University of Technology  
Topic: Magnetic Resonance Imaging (MRI) based Electrical Properties Tomography  
Tutor: Prof. Rob Remis  
Circuits and Systems Group, Department of microelectronics, TU Delft, Netherland

December 2012 - May 2016 **Ph.D. in information engineering** (curriculum: electromagnetics)  
Thesis title: Quantitative Inverse Scattering via Virtual Experiments and Compressive Sensing  
Tutor: Prof. Tommaso Isernia. Date of PhD awarded: 20 May 2016.  
University Mediterranea, Reggio Calabria, Italy

July 2013 - October 2014 Participation to some courses organized by the **European School of Antennas**:  
- ‘Antenna Imaging Technologies’, Delft, 15-20 July 2013  
- ‘Diagnostic and Therapeutic Electromagnetic Applications’, Turin, 23-28 September 2013  
- ‘Microwave Imaging and Diagnostics’, Madonna di Campiglio, 24-28 March 2014  
- ‘Antenna Synthesis’, Napoli, 13-17 October 2014.

January 2013 Qualification to practice the profession of Engineer, curriculum: Information Engineering

October 2010 -July 2012 Master degree in **Electronic Engineering cum laude with special mention** for academic achievements.  
Thesis: Simulazione e Processing di dati radar per applicazioni Landslides Early Warning.  
Tutor: Prof. Tommaso Isernia  
University Mediterranea, Reggio Calabria, Italy

May – June 2010 training and preparation of the thesis  
**CNR-IREA** Institute for Electromagnetic Sensing of the Environment, National Research Council, Naples, Italy

October 2007 – July 2010

Bachelor degree in **Electronic Engineering cum laude with special mention** for academic achievements.

Thesis: Problemi di scattering elettromagnetico: nuovi metodi e loro prestazioni.

Tutors: Prof. Tommaso Isernia and Ing. Lorenzo Crocco

University Mediterranea, Reggio Calabria, Italy

## SCIENTIFIC AWARDS

1. **Honourable Mention** from IEEE-Antennas and Propagation Society (Central and Southern Italy Chapter) in the best Student Member paper competition, March 2016.
2. **G. Barzilai award** from the Italian Electromagnetics Society (SIEM), at XX Riunione Nazionale di Elettromagnetismo - RiNEM, as the best paper presented by young researches under 35 years of age, 18 September 2014.
3. **Unicredit degree award**, for academic years 2009-2010, as the best graduate of the course of study in Electronic Engineering in the faculty, 22 June 2012.
4. **Registered in the roll of honor** (2006-2007) as one of the best high school graduate student in Italy.

## ORAL PRESENTATIONS AND CONFERENCE CHAIR

1. COST Action TD1301 MiMed, “Looking at Thermal Dielectric Properties”, WG2 meeting, Lisbon.
2. International Conference on Electromagnetics in Advanced Applications (ICEAA), Verone, Italy, 2017.
3. 32nd International Union of Radio Science-General Assembly & Scientific Symposium (URSI-GASS), Montreal, Canada, 2017.
4. 11th European Conference Antennas and Propagation (EuCAP), Paris, France 2017.
5. 10th European Conference Antennas and Propagation (EuCAP), Davos, Switzerland 2016.
6. 9th European Conference Antennas and Propagation (EuCAP), Lisbon, Spain 2015.
7. IEEE Conference on Antenna Measurements & Applications (CAMA), Antibes Juan-les-Pins, France, 2014.
8. XX Riunione Nazionale di Elettromagnetismo (RiNEM), Padova, Italy, 2014.

Chair in the Session *Microwave Imaging I* in 10th European Conference on Antennas and Propagation (EuCAP), Davos, 2016

**PUBLICATIONS:  
International Journals  
and Magazines**

1. M. Bevacqua, "A Novel Approach for Qualitative Imaging of Buried PEC Scatterers", in *Telekomnika*, vol. 15, no. 2, pp. 622-627, June 2017.
2. M. Bevacqua, L. Crocco, L. Di Donato, T. Isernia, and R. Palmeri, "Virtual Experiments and Compressive Sensing for Subsurface Microwave Tomography", in: C.H. Chen, *Compressive Sensing of Earth Observations*, chapter no.8, To be published by CRC Press [Book # K29608].
3. M. Bevacqua and T. Isernia, "Shape Reconstruction via Equivalence Principles, Constrained Inverse Source Problems and Sparsity Promotion", *Progress In Electromagnetics Research*, Vol. 158, 37-48, 2017.
4. M. Bevacqua, L. Crocco, T. Isernia, "Non-linear Inverse Scattering via Sparsity Regularized Contrast Source Inversion", in *IEEE Transactions on Computational Imaging*, vol. 3, no. 2, pp. 296-304, June 2017.
5. R. Palmeri, M. Bevacqua, L. Crocco, T. Isernia, L. Di Donato, "Microwave Imaging via Distorted Iterated Virtual Experiments", in *IEEE Transactions on Antennas and Propagation*, vol. 65, no. 2, pp. 829-838, Feb. 2017.
6. M. Bevacqua, L. Crocco, L. Di Donato, T. Isernia, Corrections to "An Algebraic Solution Method for Nonlinear Inverse Scattering", *Antennas and Propagation, IEEE Transactions on*, vol. 64, no. 9, pp. 4155, Sept. 2016.
7. M. Bevacqua, "Quantitative Inverse Scattering Via Virtual Experiments And Compressive Sensing", Ph.D. Thesis in Information Engineering, University Mediterranea of Reggio Calabria, ISBN: 978-88-99352-03-5, February 2016.
8. M. Bevacqua, L. Crocco, L. Di Donato, T. Isernia, R. Palmeri, "Exploiting Field Conditioning and Sparsity for Microwave Imaging of Non-weak Buried Targets", *Radioscience*, 2016. (DOI: 10.1002/2015RS005904).
9. Bevacqua M., Scapaticci R., "A Compressive Sensing Approach for 3D Breast Cancer Microwave Imaging with Magnetic Nanoparticles as Contrast Agent", *IEEE Trans. on Medical Imaging*, vol. 35, no. 2, pp. 665-673, Feb. 2016.
10. Bevacqua, M.; L. Di Donato, "Improved TV-CS Approches for Inverse Scattering Problem," *on The Scientific World Journal, Hindawi*, 2015.
11. Bevacqua, M.T.; Crocco, L.; Di Donato, L.; Isernia, T., "An Algebraic Solution Method for Nonlinear Inverse Scattering," *Antennas and Propagation, IEEE Transactions on*, vol.63, no.2, pp. 601-610, Feb. 2015.
12. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T., "Microwave Imaging of Non-Weak Targets via Compressive Sensing and Virtual Experiments," *Antennas and Wireless Propagation Letters, IEEE*, 2015, vol.14, no., pp.1035-1038, 2015.
13. Di Donato, L.; Bevacqua, M.; Crocco, L.; Isernia, T., "Inverse Scattering via Virtual Experiments and Contrast Source Regularization," *Antennas and Propagation, IEEE Transactions on*, vol. 63, no.4, pp. 1669-1677, April 2015.
14. Laganà A., Bevacqua M., Isernia T., "Modeling and processing L-band ground based radar data for landslides early warning," *Journal of Electrical and Computer Engineering – Special issue on Advances in Radar Technologies, Hindawi*, January 2013.

1. R. Palmeri, M. T. Bevacqua, A. F. Morabito, and T. Isernia "Inverse scattering methods as a tool for the design of GPCs devices", *IEEE Conference on Antenna Measurements & Applications (CAMA)*, Dec. 2018.
2. T. Isernia and M. T. Bevacqua, "Equivalence Principles and Virtual Focusing as a Way to Inverse Scattering", *Progress In Electromagnetics Research Symposium (PIERS), Session 2P8 Inverse Problems for Scientific, Industrial and Biomedical Applications 3*, 19-22 November 2017.
3. M. T. Bevacqua and T. Isernia, "Solving inverse obstacle problems using inverse source, equivalence principles and sparsity promotion," *International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Verona, pp. 1704-1706, 2017.
4. R. Palmeri, M. T. Bevacqua, R. Scapatucci, A. F. Morabito, L. Crocco and T. Isernia, "Biomedical imaging via wavelet-based regularization and distorted iterated virtual experiments," *International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Verona, pp. 1381-1384, 2017.
5. M. Bevacqua, T. Isernia, "Sparsity promotion and inverse source problems for qualitative reconstruction of buried targets" *32nd International Union of Radio Science-General Assembly & Scientific Symposium (URSI-GASS)*, vol., no., pp.1-1, 19-26 August 2017.
6. M. T. Bevacqua, L. Crocco, T. Isernia, "Shape Reconstruction through Sparsity Promotion and properly correlated Inverse Source Problems", *Antennas and Propagation Society International Symposium*, San Diego, California, 9-14 July, 2017.
7. M. Bevacqua, T. Isernia, "Inverse Source and Compressive Sensing for Qualitative Reconstruction", accepted for publication in *Proc. of the 11th European Conference on Antennas and Propagation (EuCAP)*, Paris, France, 2017.
8. R. Palmeri, M. Bevacqua, L. Di Donato, L. Crocco, T. Isernia, "Microwave Imaging of Non-weak Target in Stratified Media via Virtual Experiments and Compressive Sensing", accepted for publication in *Proc. of the 11th European Conference on Antennas and Propagation (EuCAP)*, Paris, France, 2017.
9. R. Palmeri, M. Bevacqua, L. Crocco, T. Isernia, L. Di Donato, "Iterated Virtual Experiments and Compressive Sensing for Quantitative Inverse Scattering Problems", *In Proc. of the XXI Riunione Nazionale di Elettromagnetismo - RiNEM 2016*, Parma, Italy, 2016.
10. M. Bevacqua, L. Crocco, L. Di Donato, R. Palmeri, and T. Isernia, "A Virtual Experiments setting for inverse scattering problems", *17th International Symposium on Antenna Technology and Applied Electromagnetics*, Montréal, Canada, 10-13 July 2016.
11. A. F. Morabito, R. Palmeri, M. Bevacqua, and T. Isernia "Array Antennas Diagnostics Through Phaseless Measurements: A Compressive-Sensing-Inspired Approach", in *Antennas and Propagation (EuCAP), 2016 10th European Conference on*.
12. M. Bevacqua, R. Palmeri, L. Di Donato, L. Crocco, T. Isernia, "Microwave Imaging via Iterated Virtual Experiments", in *Antennas and Propagation (EuCAP), 2016 10th European Conference on*.
13. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T, "Subsurface Sensing Through Compressive Sensing and Virtual Experiments", *Poster Session in International Geoscience and Remote Sensing Symposium (IGARSS)*, 2015.
14. L. Di Donato, M. Bevacqua, G. Sorbello, L. Crocco, T. Isernia, "A Novel Approach for GPR Imaging of Non-weak Targets", *Poster Session in International Geoscience and Remote Sensing Symposium (IGARSS)*, 2015.
15. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T., "Exploiting a Sparsity Enhanced Microwave Imaging Approach for Non-Destructive Evaluation", *Progress In Electromagnetics Research Symposium (PIERS)*, 2015, *Session 3A10 SC5: Inverse Scattering Methods and Applications for NDE*, vol., no., pp 1382, 6-9 July 2015.
16. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T., "Virtual Experiments for the Solution of Inverse Scattering Problems", *Progress In Electromagnetics Research Symposium (PIERS)*, 2015, *Session 1P3 Focus Session. SC5: Imaging, Inverse Scattering and Remote Sensing 2*, vol., no., pp 305, 6-9 July 2015.
17. Bevacqua, M.T.; Crocco, L.; Di Donato, L.; Isernia, T.; Palmeri, R., "Exploiting virtual experiments for the solution of inverse scattering problem," in *Electromagnetics in Advanced Applications (ICEAA), 2015 International Conference on*, vol., no., pp.836-838, 7-11 Sept. 2015.
18. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T, "Exploiting compressive sensing for non-linear inverse scattering," in *Radio Science Conference (URSI AT-RASC), 2015 1st URSI Atlantic*, vol., no., pp.1-1, 16-24 May 2015.
19. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T., "A 'virtual experiments' framework for inverse scattering," in *Radio Science Conference (URSI AT-RASC), 2015 1st URSI Atlantic*, vol., no., pp.1-1, 16-24 May 2015.
20. Bevacqua, M.; Scapatucci, R., "Magnetic nanoparticles enhanced breast cancer microwave imaging via compressive sensing," in *Antennas and Propagation (EuCAP), 2015 9th European Conference on*, vol., no., pp.1-4, 13-17 April 2015.
21. Bevacqua, M.; Crocco, L.; Di Donato, L.; Isernia, T., "The virtual experiments: An emerging framework for the effective solution of inverse scattering problems," in *Antennas and Propagation (EuCAP), 2015 9th European Conference on*, vol., no., pp.1-4, 13-17 April 2015.
22. Bevacqua, M.; Isernia, T.; Crocco, L.; Di Donato, L., "A (CS)<sup>2</sup> approach to inverse scattering," *Antenna Measurements & Applications (CAMA), 2014 IEEE Conference on*, vol., no., pp.1-3, 16-19 Nov. 2014.
23. Di Donato, L.; Crocco, L.; Bevacqua, M.; Isernia, T., "Quasi — Invisibility via inverse scattering techniques," *Antenna Measurements & Applications (CAMA), 2014 IEEE Conference on*, vol., no., pp.1-2, 16-19 Nov. 2014.

24. Bevacqua M., Di Donato L, Crocco L, "Synthetic experiments and field conditioning as an effective approach to inverse scattering", *In Proc. of the XX Riunione Nazionale di Elettromagnetismo - RiNEm2014*, Padova, Italy, 2014.
25. Bevacqua M., Scapaticci R., "Exploiting compressive sensing in MNP enhanced MWI for breast cancer imaging", *In Proc. of the XX Riunione Nazionale di Elettromagnetismo - RiNEm 2014*, Padova, Italy, 2014.
26. Bevacqua, M.; Isernia, T.; Crocco, L.; Di Donato, L., "Inverse scattering through Compressive sensing and synthetic experiments," *Antennas and Propagation Society International Symposium (APSURSI), 2014 IEEE*, vol., no., pp.665-666, 6-11 July 2014.
27. Bevacqua, M.; Isernia, T.; Crocco, L.; Di Donato, L., "New approaches to inverse scattering exploiting synthetic experiments," *Antennas and Propagation Society International Symposium (APSURSI), 2014 IEEE*, vol., no., pp.872-873, 6-11 July 2014.
28. Bevacqua, M.; Di Donato, L.; Crocco, L.; Isernia, T., "Conditioning inverse scattering problems by means of suitably designed synthetic experiments," *Antennas and Propagation (EuCAP), 2014 8th European Conference on*, vol., no., pp.1336-1339, 6-11, April 2014.
29. Di Donato, L.; Bevacqua, M.; Crocco, L.; Isernia, T., "Exploiting compressive sensing in microwave tomography and inverse scattering," *Antennas and Propagation (EuCAP), 2014 8th European Conference on*, vol., no., pp.1247-1249, 6-11 April 2014.
30. Crocco L., Catapano I., Bevacqua M., Di Donato L, Isernia T., "The Linear Sampling Method as a focusing strategy: available implicit information and hybrid inversion approaches, " *Progress In Electromagnetics Research Symposium (PIERS), Session 1P4a Theoretical Issues and Experimental Constraints in Active Microwave Imaging*, 20-23 March 2011.
31. Di Donato, L.; Bevacqua, M.; Isernia, T.; Catapano, I.; Crocco, L., "Improved quantitative microwave tomography by exploiting the physical meaning of the Linear Sampling Method," *Antennas and Propagation (EUCAP), Proceedings of the 5th European Conference on*, vol., no., pp.3828-3831, 11-15 April 2011.

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